Remixing the Music Curriculum

The new technology, creativity and perceptions of musicality in music education

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Abstract

This thesis interrogates the new music technology and its relationship to creativity, musicality and learning in the Key Stage 3[1] curriculum. In doing so it considers the effectiveness of the technology, what value pupils and teachers might place on technologically mediated musical interactions and how this relates to the principles enshrined in the National Curriculum. The research also explores the views of teachers in relation to the nature of creativity and learning in the music curriculum and their role in promoting it. The research was carried out across five sites: a PGCE music course, a year 7, year 8, and year 9 Key Stage 3 music classroom, and a panel of secondary music teachers. It was located in a qualitative paradigm which made use of observational and interview techniques. The research also probed the pupils' creative outcomes through detailed analysis. The findings suggest that the new technology can afford creative musical engagement through the manipulation of ready-made musical materials. It also suggests that pupils engage in a range of musical learning through such interactions and that they value the processes and outcomes. By way of contrast, teachers are still unclear about how to value such musical actions and are in the process of reconceptualising the learning that emerges in technologically mediated settings. Moreover, confusions still exist in relation to creativity and learning in the music classroom. This is compounded by the fact that the pupils' musical actions in relation to the new technology do not meet certain core practices and principles enshrined in the National Curriculum for music. This is problematic for, as the research suggests, such core practices often exclude or distance those pupils who are non-performing musicians. Hence the thesis concludes by positing that music education must consider a broader view of what it is to be musical. In doing so it needs to remix the music curriculum to take account of a range of musical actions. This remix should accommodate the new technology, reconfigure musical creativity and learning in the light of the technology and find new ways to value pupils' actions. In such settings the role of the teacher in shaping and supporting the pupils' musical actions will be an important consideration.

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[1] The legal term for the three years of schooling in maintained schools in England and Wales when pupils are aged between 11 and 14.

I declare that, except where explicit attribution is made, the work presented in this thesis is entirely my own.

Bill Crow

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Figures

Chapter 1: Introduction

1.1 – Context: Music at Key Stage 3

In 1995 Malcolm Ross asked the question: 'What's wrong with school music?' (Ross, 1995) Fifteen years later the question can still be posed. Why is music education such a problematic subject when located in a general school curriculum – a curriculum that is purported to be 'inclusive' (QCDA, 2010) and accessible to all?

It is not as if the problem has been ignored. The recent OfstedG17 report, 'Making More of Music', came to the conclusion that 'provision for music was good to outstanding in around half the schools visited' (Ofsted, 2009: 6) and pointed to a number of problematic areas in the music curriculum. The same report confirmed that music remained a deeply unpopular school exam subject. In 2008 only 8% of the eligible school population took GCSE[2] music while a meagre 1.3% took 'A' level[3] music (ibid.23/4). We have known for some time that many pupils, who eagerly engage with music outside of school, find music lessons in school to be boring and irrelevant (Harland, Kinder and Hartley, 2000). The identities, skills and knowledge of music teachers, which still predominantly emphasise performance in the European tradition, remain distant from their pupils' musical lives (Hargreaves et al., 2003). The content and pedagogy of music lessons is an increasingly contested area. New initiatives, such as the informal learning approaches of Musical Futures, rightly attempt to promote authenticity, ownership and relevance of the music lesson (Green, 2008; D'Amore, 2009). However, their application in the current curriculum may

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[2] General Certificate of Secondary Education: an optional music qualification normally taken at age 16

[3] Advanced Level: an optional music qualification normally taken at age 18

be seen to call into question the authority and role of the music teacher. The initiatives also raise issues in relation to effective articulation, progression, resourcing and control when placed in the context of the timetabled lesson (Hallam et al., 2008; McDonough, 2009; Savage, 2010). Some commentators (Slodoba, 2001; Finney, 2007) suggest that curriculum music may be an inappropriate vehicle for music education and suggest that it might be better articulated in a range of 'on the edge' contexts which allow pupils to personalise, manage and control their musical engagements.

Much of the critique of school music has focused on the dominance of European tradition in relation to the thinking and approaches of music educators (Cook, 1998; Green, 2003). This is a deep cultural pool that still tacitly touches many aspects of music education. Initial responses to the problem in the late 1960s attempted to engage pupils in active music making. Hence the now discredited curriculum of music 'appreciation' and unison singing – characterised as 'the scraps under the rich man's table' (Swanwick, 1988) – was to be replaced with a more engaging diet of 'exploring sound' through discovery (Paynter and Aston, 1970; Schafer, 1977). Such approaches placed creativity and performing as key processes in musical learning. However, the musical context for these explorations was closely aligned to developments in twentieth century modernism. The European tradition was back again, only this time in the guise of experimental atonal and aleatoric music. As Green points out, this avante-garde landscape remained distant from pupils' (and teachers') musical lives (Green, 2008).

This continuing lack of relevance set in motion a range of initiatives that sought to broaden the 'source material' of the music lesson. From the 1980s to the present day a range of commentators (Vulliamy and Lee, 1982; Green, 2001; D'Amore, 2009) sought to promote popular and world music in the music curriculum. Unfortunately, the way teachers utilised these new materials has sometimes resulted in the music being stripped of its vibrancy and authenticity.

In certain contexts popular music appears to have been harnessed to inappropriately reinforce the musical assumptions of the European tradition (Green, 2003). There is also the suspicion that many music educationalists have difficulty in ascribing value to the common culture of youth (Willis, 1990). The current National Curriculum, while appearing to embrace the principles of breadth and musical diversity, still holds fast to a set of assumptions drawn from the European tradition (QCA, 2007). These include performing, expression, musical literacy and a focus on the analytical 'nuts and bolts' of music (Ofsted, 2009).

The National Curriculum also supplies a list of levels that ascribe value to the quality of pupils' work. These assessment criteria, also seen in GCSE and 'A' level syllabuses, are important, for they influence perceptions of what it is to be 'musical' – they define what is worthwhile and valuable within the discipline (Sefton-Green, 2000). From the 1980s the need to assess all aspects of the curriculum has been driven by a range of political ideologies and economic imperatives (Torrance, 2002). For creative arts subjects this has been a difficult and challenging time. Sefton-Green suggests that, from a vocational point of view, arts activities might be viewed as 'sloppy and sentimental, unmeasurable and self indulgent, lacking in rigour and relevance' (Sefton-Green, 2000: 8/9). The general growth in creativity across the curriculum – partly driven by its appeal to the innovation and enterprise required by the global economy – has given rise to a set of tensions and dilemmas regarding its relationship to teaching and learning (Craft, 2005). The meaning of creativity within the school context depends on what 'rhetoric' of creativity is adopted by teachers and it is still unclear what pupils might learn when engaging in creative acts (Banaji, Burn and Buckingham, 2006). For music the framing of creativity as 'composing' might be seen as an unfortunate return to the canonic European tradition where notions of uniqueness, genius and originality hold sway (Goehr, 1992). This is not helpful when considering pupils' musical creativity (Cook, 1998). Nor is it helpful that these outcomes are assessed along with everything else in the curriculum. This has led in many instances to arid, mechanical and decontextualised assessment

practices (Ofsted, 2009). The continuing failure of school music to connect to the pupils through holistic and authentic experiences has led to the emergence of pedagogies that seek to remove formal teaching and assessment practices from the classroom. In this context pupils choose the curriculum content and direct their own learning (Green, 2008). In these emergent new settings it will be interesting to see how creativity is expressed.

Whether formal or informal, the primary articulation of musical learning in the Key Stage 3 classroom, including creativity, has been through the active engagement of 'performing'. Singing and playing music has been at the heart of classroom activity for the last fifty years in England. Of these, instrumental performance has been dominant. The range of initiatives outlined above has utilised tuned and untuned percussion, electronic keyboards and guitars. Unfortunately a large percentage of pupils do not possess instrumental skills. A recent survey suggests that over 60% of young people aged 7 to 19 do not play a musical instrument. Of those that do play, the majority learn informally. Only 16% have music lessons (YouthMusic, 2006). The reasons are not hard to find. Playing a musical instrument requires time and money (Gladwell, 2008). Formal music tuition also inhabits a cultural context which is not accessible to all (Bourdieu, 1984). Hence, music in schools, with its core valorisation of musical performance, may be excluding the majority of pupils from participation. While schools may attempt to teach instrumental skills in the course of timetabled lessons, the tokenistic provision provided at Key Stage 3 – typically one hour a week – suggests this is an unrealistic solution. It remains the case that social class influences who gets to play a musical instrument (YouthMusic, 2006). Not playing a musical instrument has implications for those who wish to continue their music education beyond Key Stage 3 (Wright, 2002) and limits their involvement in additional music activities provided by the school outside of the classroom (Ofsted, 2009).

However, we know that young people engage with music in ways which do not require instrumental skills (Willis, 1990). Music, in particular recorded music, informs their social and cultural lives in important ways. In the light of this it should be possible to broaden our definition of musicality. For Small this means valuing what people 'do' when they take part in a musical act. These actions – defined by Small as 'musicking' - include a range of responses which involve taking part 'in any capacity' (Small, 1998). Such activities could involve listening, dancing or simply 'being' where the music is. Willis has also redefined what we might mean by 'action' in relation to music. He confirms that, for young people, the most important site for 'taking part' in music centres around recorded music. This challenges the deep-seated assumption that musical performance is creative and consumption passive. Young people actively engage in getting to know about a range of musics, make choices, make musical purchases, re-order tracks, emotionally engage and share their musical discoveries with others. Here consumption becomes active – an 'important site for common culture, for individual and collective symbolic work and creativity' (Willis, 1990: 59).

These musical interactions – *sans* performing - have been made increasingly possible through the development of technology. The digitisation of sound has resulted in new patterns of disseminating and handling music (Taylor, 2001). Now many people can take ownership over their personal musical choices – re-ordering, cataloguing, playlisting – and sharing them with others. The sound itself has become malleable and can be reused in a range of contexts. Any sound can become the basis for another as music is mashed together or cut into sections (Théberge, 1997). The listener, in the light of the development of recorded sound, has increasingly become the composer through activities such as DJing and remixing (Katz, 2004). Within this changing landscape, the pupils in our schools lead increasingly technologically mediated lives. Their easy use of the mobile phone, the games console and the Internet has seen sound, vision and information coalesce in a range of increasingly linked technological devices (Buckingham, 2005).

The introduction of technology into schools has not been without its problems. Outlandish claims as to its potential have been documented by Selwyn (2002) and poor implementation and a lack of professional development has marred its effectiveness (Cuban, 2001). In music education its application has been uneven (Ofsted, 2004; Ofsted, 2009). For some it challenges the expressiveness that they see as central to music education (Salaman, 1997). For others the technology is narrowly gendered (Armstrong, 2005). The new initiatives in musical pedagogy, as enshrined by Musical Futures, appear to overlook technology (Vakeva, 2010). While it has its advocates (Savage, 2005; Finney and Burnard, 2007) and curriculum developments particularly at 'A' level have acknowledged its presence (EdExcel, 2008), there has been a reluctance in music education circles to engage fully with music technology. Dillon suggests that, while there has been a number of surveys in relation to music technology and its implementation, there has been little detailed work on how it influences learners' processes and musical understandings (Dillon, 2006a).

Up until recently the articulation of music technology in the secondary classroom has tended to emphasise performance skills (Steinberg, 2010a) and musical literacy (Sibelius, 2010). The software was drawn from the professional world of studio engineers and composers and as such required a demanding skills set. However, in recent years a range of inexpensive music software has appeared that has been directed toward the amateur. Based on the digitisation of sound outlined above, it makes extensive use of ready-made musical materials (Crow, 2006). In doing so it reflects the DJ and remix culture that is already established in popular culture. Earlier manifestations of this type of software – such as Dance eJay – have received some critical investigation and positive evaluation (Dillon, 2006b; Gall and Breeze, 2008). However, to date there has been little investigation into the new wave of loop-based software, as exemplified by GarageBand, in the secondary school context.

1.2 – Rationale for research

At present digital technology – as exemplified by programmes such as GarageBand – offers pupils the opportunity to handle ready-made musical materials in a number of ways. Most commonly they use a computer to assemble a range of given musical loops and sound samples, drawn from descriptive 'tagged' banks, to 'make' a piece of music. While the process involves pupils choosing, assembling, reordering and mixing a range of sounds and musical effects, it does not require traditional musical performance skills or theoretical understanding. Hence it appears that, perhaps for the first time, a non-performing musician – that is, someone who is actively engaged with music as a listener – can become involved in musical processes which might be seen to be creative.

Given the current framework for music at Key Stage 3, which I will describe in Chapter 3, the musical materials and processes utilised by digital technology might be seen to challenge certain beliefs held by music educators in relation to creativity, personal expression, musical skills, conceptual understanding, musical value and learning potential in contexts where those materials appear to be freely borrowed and assembled. Moreover, the traditional performance context, where the elements of expressive ensemble playing are seen as a central part of the musical learning, might also appear absent. Performance skills are also linked to current approaches to music composition. Composing is generally seen as the main creative element in the music curriculum. However, current practice implies that this type of creativity still requires traditional instrumental skills and theoretical understanding.

By way of contrast, certain aspects of the new technology suggest that learners who lack traditional musical skills or understanding can interact

creatively with a previously unattainable range of musical materials. However, what we might mean by creativity, its relation to musicality and what its role is in an educational context, is far from clear. Hence this research sets out to investigate the new technology in relation to musicality and creativity in the Key Stage 3 curriculum. It does this by investigating GarageBand 'in action' in the Key Stage 3 classroom and by probing the views of beginning and serving teachers.

In doing so it asks a number of key questions. It enquires into the effectiveness of the technology in the classroom setting by considering how well the technology enables the teachers and pupils to handle the resources and access the musical and creative potential of the software. It probes the nature of the musical process in terms of motivation and engagement and the perceived learning of the pupils. As the pupils begin to produce musical outcomes it asks the participants how they might value their music 'making'. Part of this value is tied up with the authenticity of the outcomes. The research also enquires into the role of the teacher in shaping and articulating the new learning context.

The role and perception of the teacher are also investigated by asking how beginning teachers feel about creativity. In particular the research probes how well they felt prepared to teach creativity, what they felt pupils were learning in creative contexts, what difficulties were posed by current creative contexts and how they might use creativity in their own teaching. The views of a panel of serving teachers were also sought in relation to the quality of the musical outcomes from the school-based research as well as their views on musicality, creativity and learning in relation to the new technology.

In summary I am of the view that the research is important in that it investigates a new technologically mediated area of musical interactivity, it reviews the meaning of musical creativity and it considers how the 'non-

performing musician', who might have problems accessing the current music curriculum, can be conceived and valued as being 'musical'. In doing so it reconsiders the role of teachers at a time when their authority is in doubt and critiques current perceptions relating to music education at Key Stage 3. It would hope to contribute to an academic debate that also seeks practical and equitable solutions to the development of music provision in the curriculum. As with other recent initiatives in music education, the implications of this research would hope to offer pupils an experience that connects to their musical world, offers choice and confers ownership, and values the processes and outcomes that enable and progress their learning.

1.3 – Research questions

This section broadly summarises the questions and sub-questions that focused and guided my research and maps where they are dealt with in the body of the text. They are:

- How do pupils conceive of their musical interaction with the new technology in the learning environment?
    - What are the advantages and disadvantages of using the technology? Are the pupils motivated by this type of musical environment? In what ways does it allow pupils to express their musicality? What range of musical choice does it offer the pupil? What do the pupils feel they are learning? How does it compare to previous musical learning experiences in school?

The advantages and disadvantages of the technology and its relation to pupil motivation are explored in Chapter 2 (see 2.5 onward). The research relating to musicality, choice and learning is interrogated with in Chapter 3 (see 3.3 and 3.6). Learning in creative contexts is dealt with in Chapter 4 (see 4.5).

- How do teachers conceive of the interactions that take place in a technologically mediated learning environment?

    - Do teachers find the technology easy or difficult to manipulate and manage? How do teachers conceive of their role in fostering and supporting creative work in this context? What are the teachers' perceptions of pupil response in relation to the technology? What do they think the pupils are learning, or are not learning, when they engage with the technology? To what extent do teachers think the technology enhances or limits their pupils' musicality and creativity?

The teachers' perception of the manipulation and management of the technology is initially explored in Chapter 2 (see 2.5 onwards) and then revisited in relation to the teacher's role in supporting creative work in Chapter 6 (see section 6.2.1). Issues relating to pupil response and learning are mainly interrogated in Chapter 3 (see 3.5 onwards). Creativity and the new technology is explored in Chapter 4 (see 4.5 onwards).

- What musical actions do pupils engage in when making use of digital technology?

    - How does the technology shape the pupils' interaction and response? What is the nature of the musical processes and outcomes? How do they relate to the current assumptions regarding musicality and learning in the Key Stage 3 classroom? What musical actions are missing when pupils engage with the technology? Does the technology support and develop musicality?

The exploration of musical actions relating to performing, listening and the technology are mainly dealt with in Chapter 3 (see 3.3, 3.4, 3.5). Throughout this chapter current assumptions regarding musicality in the current Key Stage 3 music curriculum are also interrogated. Chapter 4 touches on the musical actions relating to creative response (see 4.5).

- In what way does the new technology promote musical creativity?
    - How do teachers conceive of creativity in the music curriculum? How do creative approaches influence and mediate teachers' actions and pupils' learning? In what way can interactions that make use of ready-made musical materials be said to be creative? Do the participants feel they have creative choices and creative control over these materials? Do the pupils relate to, and feel ownership of, the musical outcomes?

Teachers' general conceptions of creativity and its relationship to learning in the music curriculum are interrogated in Chapter 4 (see 4.4). The use of ready-made musical materials and their relation to creativity and ownership are also explored here (see 4.5.3).

- In what way can the outcomes of the new technology be valued and assessed?
    - Do the pupils value the processes and outcomes of the new technology? How might teachers evaluate pupils' work that is located in a technologically mediated setting? What criteria might be used to evaluate the musical outcomes of the new technology?

The issues relating to the new technology and value are dealt with in Chapter 5. How the pupils and teachers evaluated the music making with the new technology is explored in section 5.3 and 5.4. How teachers evaluated the pupils' musical outcomes, and the criteria they devised, are interrogated in section 5.5.

1.4 – Research design

This study is located within a qualitative paradigm and is concerned with creativity and its relationship with the new technology in the Key Stage 3 music curriculum. The research was carried out across five sites: a PGCE music course,

a Year 7, Year 8, and Year 9[4] Key Stage 3 music classroom, and a panel of four secondary music teachers. These are detailed below. The sites and participants are all associated in some way with the Goldsmiths College, University of London, teacher education partnership, of which I am the course coordinator. Underpinning the study, and supplying it with a broader coherence, is the concern to evaluate and develop creative approaches to teaching and learning which acknowledge cultural and technological change.

While the research primarily looks at the creative affordances of the new technology in the Key Stage 3 curriculum, it is amplified by other research which provides discussions and data in relation to teachers' perceptions regarding creativity and value. The criteria that guided the selection of sites and participants were as follows:

- The teachers and beginning teachers had some experience of fostering creativity in the Key Stage 3 music curriculum
- The school sites possessed sufficient resources to articulate the new technology in whole class contexts
- The school sites could represent the new technology through GarageBand software (to be explained in Chapter 2)
- The pupils were aged between 11 and 14 and were all engaged in timetabled music lessons
- The pupils' interaction with the software would allow them to engage in ways that did not involve musical performance in the traditional sense
- The demographics of the school provided a balance of socio-economic and gender characteristics found in the state school system in South London

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[4] Approximate pupil ages are: Year7 – age 11; Year 8 – age 12; Year 9 – age 13

The following map (Fig.1) delineates the main contours of the research design:

Graphical Map of Research Design

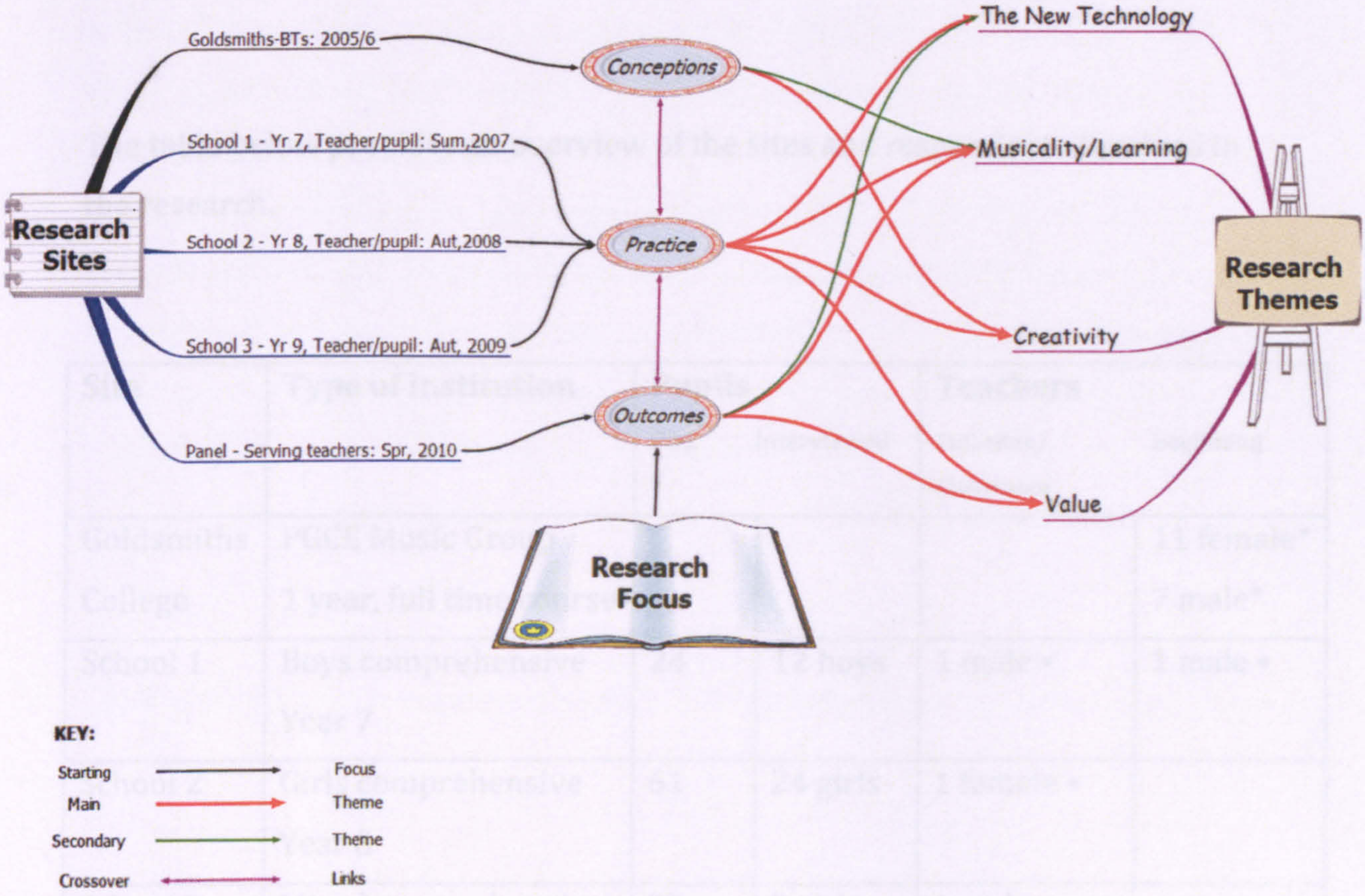

Fig. 1: Graphical map of research design

In the interests of focus, I chose to narrow the lens of the study in certain ways. I decided to look at only one expression of the new technology – 'GarageBand' software. As more fully described in Chapter 2, this software exemplifies certain key characteristics of the new technology – the most obvious one being its framing of the musical 'ready made' or 'loop'. While other software packages offer similar interactions I felt that, to include them, would cast the net too wide and consequently dilute the analysis. I also only focused on timetabled, teacher led, whole class lessons. This is to ignore that, in all the school sites, pupils were

beginning to engage with the technology in out of class contexts. However, while this is a potentially interesting area of research, my concern was to probe how the new technology sat in relation to classroom learning, the role of the teacher, and the context of the Key Stage 3 National Curriculum.

1.4. 1 – Empirical Settings

The table below provides an overview of the sites and respondents involved in the research.

Site	**Type of institution**	**Pupils**		**Teachers**	
		Obs.	Interviewed	Full-time/ Classroom	Beginning
Goldsmiths College	PGCE Music Group 1 year, full time course				11 female* 7 male*
School 1	Boys comprehensive Year 7	24	12 boys	1 male •	1 male •
School 2	Girls comprehensive Year 8	61	24 girls	1 female •	
School 3	Mixed comprehensive Year 9	22	5 girls 5 boys	1 male •	
Teachers' Panel	Teachers from London comprehensives			1 female ≠ 3 male ≠	
Totals		107	46	7	19

Key: ** Questionnaire and interview*

• Observation and interview

≠ Listening exercise and group interview

(Note that the full-time teachers in schools 1,2 and 3 taught the music lessons but did not take part in the teachers' panel.)

Fig. 2: Research sites and respondents

The research sites were located in the South London area and the teachers involved in the research taught in secondary schools in this area. The 'teachers' included beginning teachers – i.e. they were engaged in their 'training' year. As previously stated, all the school based research sites were part of the Goldsmiths College, University of London teacher education partnership. These schools normally take PGCE music students for teaching practice placement. In my capacity as course coordinator I have often visited the schools to observe students engaged on teaching practice. It was through these connections that discussions relating to the research were undertaken. All the schools had just received the hardware and/or software that would enable them to use GarageBand software in a Key Stage 3 classroom context for the first time. I played no part in the focus or planning of the teaching and learning but stipulated that I would like to observe some handling of 'ready made' musical materials (i.e. 'loops') in the classroom work. The following provides some contextual detail for the sites in the research.

Goldsmiths College, University of London: PGCE Music Group, Lewisham, South East London

The research was carried out over the academic year of 2005-2006. All the respondents to the research were music graduates who had chosen to do the one-year full time teacher training course that I coordinate at Goldsmiths College. The course results in the award of PGCE (Post Graduate Certificate in Education) with QTS (Qualified Teacher Status), and allows the holder to teach in secondary schools in England and Wales. The students are school based for two thirds of the course during which time they engage in teaching music to pupils aged 11 to 18-plus years. In actual terms they mainly teach Key Stage 3 pupils. They are placed in two schools over the course of the year and the schools are mainly located in South East London. Part of their teaching requires them to

foster musical creativity in their pupils. At the time of the study there was no new technology available to the group. Hence they would have asked the pupils to be creative by composing through traditional performance activities.

School 1: Boys Comprehensive, one Year 7 class, Newham, South East London

The research was carried out over an eight-week period with one Year 7 class during the summer term of 2007. School 1 is located in London's East End in the borough of Newham and is a voluntary-aided Catholic comprehensive secondary school for boys aged 11-18. The school is set in an area of social and economic deprivation and the majority of the pupils come from a range of non-white ethnic backgrounds. Given this, the school does well in the local and national league tables at GCSE level and has received recent positive OFSTED reports.

The music department has two full-time teachers and one part time teacher. During the period of the pilot study, the school also had a Goldsmiths PGCE music student on teaching placement. The head of department, who taught the sessions, and the beginning teacher, were interviewed. Unusually the department has its own technical support assistant who maintains the computers in the department and who also assists during computer focused lessons. The department is committed to using technology to support musical learning and the head of department, although new to GarageBand, was confident in handling the available software and hardware. Prior to the pilot study the technology was mainly used to support pupils at Key Stage 4 and beyond.

School 2: Girls Comprehensive, two Year 8 classes, Bromley, Kent

The research was carried out over two seven-week periods with Year 8 classes during the autumn term of 2008. School 2 is located in the London Borough of Bromley and is a girls' comprehensive school with a co-educational sixth form centre. The school is set in a salubrious, 'leafy-green', area of south suburban London and the majority of the pupils are white. The school is highly regarded and oversubscribed. Consequently the school does very well in local and national league tables at GCSE level and has received an outstanding OFSTED report.

The music department has three full-time teachers. The second in the department, who taught the sessions, was interviewed. The school had just set up a new technology classroom with the recent acquisition of a set of iMac computers and was beginning to use the facility for the first time. Other lessons in the music department were more traditional in nature. The observed teacher had a good working knowledge of music technology and had used it previously in a professional context. However, she had not made use of GarageBand in the classroom before. In tandem with the introduction of GarageBand the school had just set up a separate technology-based recording studio and was introducing 'A' level music technology into the curriculum.

School 3: Mixed Comprehensive, one Year 9 class, Greenwich, South East London

The research was carried out over an eight-week period with one Year 9 class during the autumn term of 2009. School 3 is located in South East London in the borough of Greenwich and is a Church of England comprehensive secondary school for boys and girls aged 11-18. The school is set in a complex mix of affluence and economic deprivation. The pupils who attend the school mainly come from a range of non-white ethnic backgrounds. The school has struggled

academically in recent years and has on occasion been placed 'in special measures'[5]. Consequently the school does not currently do well in the local and national league tables at GCSE level and has received only 'satisfactory' Ofsted reports.

The music department has two full-time teachers. The second in the department, who taught the sessions, was interviewed. The school had just received a set of new iMac computers and was in the process of introducing them into the curriculum. In particular they were using the technology to encourage greater interest in music at Key Stage 4. As in the other schools they had not used GarageBand in classroom lessons before. The observed teacher was developing a working knowledge of music technology and was ICT literate. He also appeared keenly aware of the musical worlds inhabited by his pupils.

Figure 3 demonstrates the contrast between the schools using the following indicators of school attainment, academic intake and relative depravation: GCSE passes at A-C including English and Maths; pupils with Special Educational Needs, supported in school action; pupils receiving free school meals.

Image redacted due to third party rights or other legal issues

[5] A school is placed into special measures if it is judged as 'inadequate' by the Ofsted (Office for Standards in Education) inspection regime

Teachers' panel: Convened at Goldsmiths College

The teachers' panel was convened in the spring term of 2010 and consisted of four teachers. The teachers, three male and one female, were all music subject mentors in the Goldsmiths teacher training partnership. The session was conducted over a three hour period and consisted of listening to a selection of pupils' musical outcomes garnered from the schools described above. This was followed by a group discussion.

1.4.2 – Research Tools

The data was collected using questionnaire, participant observation, semi-structured interviews and pupils' musical outcomes. The questionnaire was administered at the start of the beginning teachers' training year. The observational data was collected during lessons using a naturalistic mode of observation as a participant-observer, recording what was happening in the learning environment. The one-to-one interviews with pupils took place during, but apart from, the practical sessions – while the pupils were still actively engaged with the technology. The one-to-one and group interviews with the full-time classroom teachers took place out of lesson time and were conducted at the end of the learning or training sequence. The observational data and participant responses were collected in a number of formats including audio/visual recording and written notes/diary. The pupils' musical outcomes were collected as a GarageBand programme file and were converted to audio or movie files.

1.4.2.1 - The questionnaire

The questionnaire (see Appendix 1a) was administered to the group of PGCE beginning teachers before they embarked on teaching experience and used a mixture of closed and open-ended questions to probe the respondents' views. Alongside some factual information regarding previous education, age and gender, the questionnaire sought the students' views in three broad areas: 1) what were their experiences of musical creativity to date? 2) what were their own views regarding musical creativity? 3) what role did they expect musical creativity to play in classroom based teaching and learning? Eighteen students completed the questionnaire of which eleven were female and seven were male.

1.4.2.2 – The observations

Observation took place in the first four weeks of each school-based scheme of work. This resulted in twenty weeks of classroom observation. In some instances other activities were observed in the final weeks of each scheme, for example, the final performances in school 2. The observations were carried out in whole class contexts where pupils and teacher inhabited the same working space. In all instances some photo or audio-visual evidence was gathered and each session was recorded in note form. Where applicable, these notes took the form of a timed running commentary which recorded what I perceived to be the actualities of the situation. I am aware that by contextualising the classroom actions in the light of my research focus I was imposing certain principles of selection and organisation (Brown and Dowling, 1998). When the pupils were engaged on practical activities I took on the role of participant observer. The observations were mainly used to provide an account of the interactions of the teacher and the pupils with the technology. They also provided a shared experience that could be probed and, where necessary, verified in the one–to-one interviews.

1.4.2.3 – The interviews

Four sets of interviews were undertaken in the course of the research. These were: beginning teacher interviews, classroom pupil interviews, classroom teacher interview and group interview of the teacher panel. All the responses were recorded on digital audio, transcribed verbatim and then analysed using 'nVivo' qualitative data analysis software. When verbatim quotes are used in the text the respondents are identified in the following way: pupils: first name, status, school (e.g. Emma, pupil, School 2) – teachers: alphabet letter, gender, status, and where appropriate school or 'panel' group (e.g. 'C, female, teacher, School 2')

The details of the interview sets are outlined as follows:

Beginning teacher interview:

These interviews – conducted after the PGCE students had completed two teaching experiences – asked the same set of six questions of each individual respondent (see Appendix 1b). The interviews were approximately thirty minutes in length and were administered using an interview schedule. Sixteen beginning teachers were interviewed. The questions sought to revisit and further probe the students' views on creativity in the light of a 'real world' experience.

Pupil interviews:

The pupil interviews took place toward the end of each scheme of work. This was usually in the fourth to the sixth week of the block depending on the development of the classroom work. A basic set of shared questions was asked in all the schools with some slight modifications being applied as the research developed (see Appendix 1c). The interviewed pupils were chosen at random and interviews were carried out during the lesson, in a quiet room away from the main classroom. Forty-two pupils were interviewed and each interview lasted

approximately ten minutes. The questions probed the pupils' sense of their own musicianship along with their perceptions of the GarageBand software in relation to its effectiveness, learning potential, creative affordances and musical authenticity/value.

Teacher interviews:

The teacher interviews were carried out after the scheme of work was completed. The questions asked were similar to those posed to the pupils. As with the pupil questions, some slight modification of the shared set of questions took place as the research developed (See Appendix 1d). The three classroom teachers that led the classroom sessions, along with a beginning teacher who supported the work in school 1, were interviewed. Interviews lasted approximately thirty minutes. As with the pupils, the questions focused on their perceptions of the GarageBand software in relation to its effectiveness, learning potential, creative affordances and musical authenticity/value. In the course of the interviewing, some notion of the teachers' role in relation to technologically mediated classrooms emerged.

Teachers' panel listening response and interviews:

The panel consisted of four full time classroom teachers: three male and one female. The session consisted of the groups' listening response to five final outcomes of the pupils' GarageBand class work. This was followed by a group interview (see Appendix 1e). The process took approximately three hours. The musical outcomes were played 'live' – that is, GarageBand scrolled in real time on a projected screen as the music played. The teachers were given some of the 'learning' context for the work and each piece was played twice. The session sought to explore how the teachers' might value such work, what criteria they might use to do so, and what their views were on technologically mediated learning/creativity and the role of the teacher in such contexts.

1.4.2.4 – The pupils' musical outcomes

All the saved pupils' musical outcomes were collected at the end of each scheme of work and transferred to my own studio resources. These were then transcribed into digital audio. No further editing or additional manipulation of the work occurred. In the case of school 3, where video accompanied the music, I made use of screen recording software to show the interplay of vision and sound. These are presented in DVD format as 'movie' files (see Appendix 3 and 4). Fifty-three musical outcomes were analysed in relation to the learning contexts developed by the teachers. Of these, five pieces demonstrating a range of pupil response were drawn from the three schools. These were presented to the panel and have been analysed by myself in some detail. My own analysis of this work has been conscious of the attempt to avoid implicit or 'hidden' value judgements. The views of the teachers' panel have, where possible, been used to balance my analysis. Appropriate research tools may still need to be developed in relation to the analysis of such data. However, in this research they have proved to be a rich source of triangulation.

1.4.3 – Methodology

The methodological framework for my research is broadly qualitative in nature. While qualitative research promises rich descriptions of participants' behaviour and actions, several problems remain surrounding its validity. These include:

> the distinct possibility of researcher bias, the time demands of processing and coding data, the adequacy of sampling when only a few cases can be managed, the generalizability of findings (and) the credibility and quality of conclusions. (Miles and Hubermann, 1994: :4)

In the light of these considerations I assume something of a 'post – positivist critical realist' stance in that I recognise the importance of 'multiple measures and observations ... and the need for triangulation across multiple errorful sources' (Trochim, 2006). Like Glassner and Loughlan (quoted in (Silverman, 1993), I am also concerned to see the world from the perspective of my subjects. This moves some of the methodology toward the area of interactionism which treats responses 'both as culturally defined narratives and as possibly factual statements'. (ibid.)

The methods used to gather, process and analyse research data offer a number of advantages and disadvantages. The questionnaire may appear to offer a relatively quick way of garnering relevant data. However, the depth of this information and its reliability (Kerlinger, 1970) will depend on a number of factors including questionnaire construction, context, response rates and response focus and depth (Foddy, 1993). The questionnaire in this study provided some interesting factual data. However, richer data concerning the respondents' perceptions would have been more effectively gained through interview. Observational research may produce a surfeit of information that is difficult to analyse and interpret. In this research it has provided some valid factual and descriptive context for the research. Spradley (1980) distinguishes nine dimensions on which descriptive data might be collected. They are: Space – the layout of the physical setting; Actors – the relevant details of the participants involved; Activities – the various activities of the actors; Objects – physical elements (in my research the technology); Acts – specific individual actions; Events – particular occasions in a lesson; Time – the sequence of events; Goals – what actors are attempting to accomplish; Feelings – emotions in particular contexts. The experience of this research suggests that the first eight areas do provide valid contextual information – for example, resources, room layout, ways of working, and so on. However, it is difficult to ascertain the ninth area, 'feelings', from observation alone.

Interviews do provide depth of response in the area of feelings and perceptions but are 'prone to subjectivity and bias on the part of the interviewer' (Cohen and Manion, 1994). I hope I have addressed this in part by carefully formulating my research questions and their meaning. For example, the research developed a core set of interview questions that guided the respondents through a range of closed and open responses (see Appendix 2). I am aware that the ethnographic process is in part a constructed truth and that my role as 'author' might be seen as editorial (Clifford and Marcus, 1986). However, I hope the range of data sources effectively triangulates the data presented here.

Once the interviews were recorded and transcribed I postcoded the text with the aid of *NVivo* software. This software is one example of CAQDAS – Computer Aided Qualitative Data Analysis Software. The process of coding can broadly be seen to involve the translation of responses and information into categories for the purpose of analysis (Kerlinger, 1970). However, as Coffey and Atkinson point out:

> Coding is much more than simply giving categories to data; it is also about conceptualising the data, raising questions, providing provisional answers about the relationships among and within the data, and discovering the data (Coffey and Atkinson, 1996).

The phenomenological analysis of the interview data in this way follows many of the guidelines suggested by Hycner (1985) – for example, the delineating of units of relevant meaning, relating these meanings to the research question and clustering the meanings into units. He also reminds us to return to the sense of the interview as a whole to avoid arid de-contextualisation of responses. I hope I have followed these suggested guidelines in my research. However, I am aware that one of Hycner's 'steps' – that of independent verification of relevant

meanings – has not been available to my investigation due to the small-scale nature of my research.

The pupils' musical outcomes have been transcribed into audio and movie files. Where appropriate these have been accompanied by graphical representation of the music drawn from screenshots of the software and other sources. As previously stated, I am aware that analysis of these outcomes poses a number of difficulties in terms of interpretation. My own analysis of the music – linked to the learning focus developed by the classroom teachers – has sought to explore the pupils' response in terms of the appropriateness, musicality and complexity of their musical choices. This inevitably raises issues of the difficult nature of ascribing any sort of value in the aesthetic field. For example, my perceptions might be coloured by the 'hidden assumptions' I possess as a trained musician and educationalist. If these are aesthetically and culturally located in the western classical tradition they could be seen to be inappropriate or redundant in the analysis of alternative musical genres and styles. In an attempt to address this I have sought the views of significant others – the teachers' panel – to broaden and validate my findings.

1.4.4 – Theoretical position

While I have endeavoured to present an accurate account of the research findings, my analysis of the data is coloured by a theoretical frame which inevitably informs my views. Like Dewey, I am convinced that a music education should be made available to all the children in our schools (Dewey, 1916). I also agree with him that the social function of a music education should primarily be 'avocational' as opposed to vocational (Woodford, 2005). A number of commentators (Goehr, 1992; Cook, 1998; Green, 2003) have demonstrated how elitist artistic agendas have influenced, and continue to influence, the expression of musical learning in our education system. This has not only defined the choice

of musical materials it has also prescribed what it is to be 'musical'. In this context to be musical is to perform and compose by playing or singing in 'live' contexts. However, this definition of 'musical' appears to alienate and exclude a large percentage of our school population from valued musical activity (see, for example:Harland, Kinder and Hartley, 2000; YouthMusic, 2006; Ofsted, 2009). In using Marx's concept of alienation (Marx, 1964 (1840)) I mean the 'situation in which the creations of humanity appear to humans as alien objects' (Haralambos, Holborn and Heald, 2004: 947). I agree with Bourdieu (1984) who develops this idea by positing that this alienated group lacks the cultural capital – the requisite consciousness, time and money – to take part in music making.

To include this alienated group we need to redefine musicality. As previously mentioned Small's expanded view of 'musicking' (Small, 1998) is helpful here. He develops a broad notion of musical action, which suggests that 'to music' is to 'take part, in any capacity, in a musical performance,' (ibid.9). I would be concerned here by the return of a notion of 'musical performance'. Even in the field of popular music 'live performance' is valorised, wrongly I believe, above all other forms of musical engagement (Frith, 1996). However, Small broadens his definition of performance to include action in relation to recorded music. For my own part I feel it is to recorded sound that we should turn to enhance our notion of musicality. Raymond Williams (1963) insists that culture is ordinary and for many young people it is in listening to recorded music that they actively engage with a musical culture. For Willis (1990), popular music and the handling of recorded sound is an important site of common culture and symbolic creativity.

In recent years the development of new technologies has expanded the use and reuse of recorded sound (Théberge, 1997; Katz, 2004). In this development the listener has increasingly taken on the role of creator. Like Buckingham (2003) I accept that technology has not transformed education. However, I also agree with him when he states that we need to address the

divide between the digital childhoods of our pupils and the learning environment of the school (Buckingham, 2005). Hence while being aware of 'the seductive voice of better futures over-dubbing dismal and disappointing pasts' (Finney and Burnard, 2007) I believe we should continue to evaluate and test new developments in music technology.

In doing so I would want to follow Green (Green, 2008) in providing learning contexts that acknowledge the pupils' musical world, offer choice and afford ownership. However, unlike some articulations of Green's work I do not feel that pupils need necessarily 'perform' to be musical. Nor do I accept that the teachers' role should be one of facilitator. In relation to technologically mediated learning I believe, along with other commentators (Reid, Burn and Parker, 2002; Gall and Breeze, 2008) , that teachers should actively design valuable learning experiences which impart practical and conceptual skills while balancing constraint and freedom. This can be done by allowing the pupils to engage in creative learning. Like Csikszentmihalyi (1996) I would want to value the creative experience by reference to the participants' sense of 'flow' and engagement. I would also want to endorse a democratic view of creativity (NACCCE, 1999) which accepts that all can gain ownership and pride in their musical making. However, like Craft, I feel that creativity needs to be linked to learning and must be contextualised in the subject area (Craft, 2005). I would want to refute notions of creativity in education which stress 'genius' or an 'economic imperative' linked to vocation and the market place (for a fuller discussion see: Banaji, Burn and Buckingham, 2006).

1.4.5 – Ethical issues

I recognise that it is important to follow the ethical guidelines of the British Educational Research Association (BERA). These state that educational research should be conducted within an ethic of respect for the person, knowledge,

democratic values, the quality of academic research and academic freedom. I have gained consent from all the participants involved in this research. Where appropriate written consent has been used to seek the consent of music departments, head teachers and the parents/guardians of the pupils. In School 2 one parent requested that I refrain from photographing her daughter during lessons. This request was respected. The research does not investigate any issues in relation to the participants' private lives or emotional well-being and their anonymity has been preserved.

The purpose of the research has been shared with all the participants. In addition to this the teachers involved in the research have been given the opportunity to read the thesis is draft and final form. Two full time classroom teachers have chosen to do this but to date no feedback has been provided. I have endeavoured to ensure that I carry out my responsibilities to the community of educational researchers by presenting my findings without distortion or falsification.

1.5 – Organisation of thesis

I have attempted to organise this thesis in a manner that logically articulates the main foci of the research. For the most part I have presented the relevant literature alongside the research in the hope that it contextualises and informs the findings. To maintain focus and clarity I have avoided constant reference to relevant texts when presenting and discussing these findings. Connections are made and theorising undertaken where appropriate and drawn together in the summaries and conclusions that draw each chapter to a close. I have tried throughout to use a writing style which is appropriate, concise and clear and which avoids unnecessary and obscurantist terms and language.

Chapter 2 probes the use of the new technology in the Key Stage 3 classroom. The introduction and continued application of music technology in schools has been problematic. While it appears to have offered a lot in terms of learning potential and pupil motivation, its effectiveness has been patchy. An overview of this situation is provided before looking in detail at an expression of the new technology in the form of GarageBand software. This is followed by an analysis of the issues surrounding the acceptance of technology in music education. While many have trumpeted the benefits of technology it is still far from clear if its value is acknowledged in the hearts and minds of all music educationalists. In the light of this the research focus of the chapter centres on the introduction of the new technology into the Key Stage 3 curriculum. It probes the technology's ability, or lack of ability, to motivate, engage and facilitate the pupils' musical activities. A positive picture emerges from the analysis of the participants' response. How this might sit within the National Curriculum is explored in the next chapter.

Chapter 3 analyses how the new technology might sit within the current key stage 3 music curriculum. This is a contentious area, for it probes the assumptions and values that underpin musicality and what it is to be 'musical'. Hence the chapter interrogates the perceptions relating to, and problems arising out of, musical performance, musical notation and listening. By doing so it further probes the articulation and affordances of the new technology. One area in particular emerges as important: the centrality of musical performance in the musical learning process. The majority of the interactions observed in relation to the GarageBand software did not involve a traditional performing element. This being the case what were pupils learning in their interactions with the software? The research outcomes discussed in this chapter focus on the nature of the musical learning in relation to the new technology. The chapter suggests that there may be alternative ways in which pupils can be seen to be musical. One expression of this is the exercising of musical choice in creative contexts. It is to creativity, music education and the new technology that we turn to in chapter 4.

Chapter 4 considers the nature and meaning of creativity and how it might sit in a technologically mediated music curriculum. There appears to be a number of creative opportunities that frequently occur in the personal digital lives of our pupils. They instigate, share, order and reuse digital images, texts and sounds. However, it is still unclear how creativity contributes to teaching and learning in the curriculum. The emerging and competing literature surrounding creativity is probed here. The particular research focus of this chapter is on how emerging teachers conceive of their pupils and their own creativity in relation to musical teaching and learning. If this is not clarified then their role and function in creative contexts may remain unfocused. Moreover the status of music and its place in the curriculum could be undermined. The chapter concludes by looking at the affordances of the new technology in relation to musical creativity. This returns us to the GarageBand classroom and to how the participants perceive and value the processes and outcomes of such creative work.

Chapter 5 looks at the new technology and creativity in relation to value and assessment. The chapter begins by probing some of the tensions and trends that impact on current perceptions relating to value and assessment. The agendas that drive such perceptions are not always conducive to learning or to creativity. In the light of this the chapter continues by enquiring what pupils, in their own words, value in relation to working with the new technology. This approach to measuring effectiveness is often overlooked in education. Generally it is the teacher who values or assesses pupils' work. However, the research discussed here also asks teachers to evaluate the process of working with the new technology as well as pondering what pupils might be learning when they engage in creative interaction. The chapter concludes by looking at the musical outcomes of the pupils' work. This is accompanied by an audio and visual commentary that articulates and analyses the creative choices of the pupils. The teachers' panel response is also discussed here in relation to the development of assessment criteria and the grading of the pieces. While it suggests areas of

agreement it also points to certain values being drawn from possibly inappropriate sources.

Chapter 6 concludes by considering the role of the teacher, the implications of the research and the limitations of this enquiry alongside suggestions for further research. Current perceptions surrounding the role of the music teacher appear to result in a number of conflicts. In the light of this the research probes how the teachers involved in the research saw their role. This leads on to the implications of the research which reviews four key areas: including technology in the mix of classroom music; remixing the current music curriculum to allow for the musical actions of non-performing musicians; mixing in creativity in a way that reconnects with musical expression and learning; and valuing the resulting musical processes and outcomes. The chapter concludes with a number of suggestions for future research which will hopefully further clarify the new technology's relation to teaching and learning and to the musical lives of our pupils.

Chapter 2: The new music technology and the classroom

2.1 – Introduction

This chapter probes the use of the new music technology in the music classroom. It begins by providing a brief overview of how music technology has been used previously in the music curriculum. It continues by looking at how the new music technology – as expressed by software such as GarageBand – offers a range of features which bypass certain skills which were required by other expressions of technology in music education. Hence the research questions addressed in this chapter are:

> How do pupils conceive of their musical interaction with the new technology in the learning environment? What are the advantages and disadvantages of using the technology? Are the pupils motivated by this type of musical environment?
>
> How do teachers conceive of the interactions that take place in a technologically mediated learning environment? Do teachers find the technology easy or difficult to manipulate and manage?

The issues relating to the intrusion of technology into areas of learning such as music are contentious. Perhaps few other subjects suggest the importance of the 'human', the 'expressive' and the 'emotional' as music does. Hence it is important to debate, as this chapter does, some of the issues surrounding technology, culture and education in an attempt to clarify the new technology's potential role in music education. Of course, technology, by its very nature, is 'developing' all the time and there is a need to appraise new technologies as they appear. Hence the final section of this chapter looks at how the GarageBand software was used by three London schools over a period of twenty-four weeks. It does this by probing, through observation and interview, my interpretation of the

participants' actions and what teachers and pupils said they thought about the technology as a resource in the classroom. The research focus attempts to probe the following: How well did the technology work in the classroom setting? What did pupils and teachers like or dislike about its functioning? What were some of the issues that arose in relation to the technology and the Key Stage 3 classroom?

2.2 – A brief overview of music technology in music education

In recent times many musicians, music educators and music students have begun to employ some sort of computer-based technology in their musical lives. Taylor maintains that:

> The advent of digital technology in the early 1980s marks the beginning of what is the most fundamental change in the history of Western Music since the invention of music notation in the ninth century (Taylor, 2001: 3).

Throughout the 1990s schools began to incorporate, with varying degrees of success, computer programmes into their range of classroom resources. Unfortunately they posed a number of problems for the teacher and pupil. They were what Scrimshaw called 'open-ended' packages – in effect 'blank sheets' waiting to be filled - which assumed that the learner was an active creator of knowledge (Scrimshaw, 2001). In effect this very 'openness' could discourage pupils and teachers, as could the lack of 'user-friendliness', which betrayed the software's genesis as professional packages for professional musicians.

One such package was the music sequencer. With early music sequencers the computer was linked to a 'midi[6] keyboard' which was used to 'play in' the notes. Hence some degree of keyboard performance skill was required. As will be discussed in Chapter 3, many pupils lacked this ability. The following tables summarise the environment, assumptions and characteristics of earlier music sequencing software.

Types of software	Environment and Assumptions	Characteristics include:
Cubase Logic Cakewalk	**Environment:** *A musician performing into a 'virtual recording studio'* **Assumptions:** *'Live' performance input from a MIDI instrument or a microphone.*	• a *multi-track* area where you can record 'performances' layer by layer • a *mixing desk* to balance the layers • *effects units* to process the sounds • *editing areas* where the sounds can be copied, moved and deleted • *external sound sources to* play back the sounds

Fig.4: Characteristics of original music sequencers (adapted from Crow, 2007)

The other main type of programme to find its way into school was scoring software. With these packages pupils were required to assemble virtual musical notes onto a manuscript screen. Consequently a working knowledge of traditional music notation was required or had to be taught. While the technology offered many helpful ways of handling notation and enabled users to see and hear the music in real time, it nevertheless emulated timeworn traditional practices that previously had been achieved with pen and paper. While music teachers recognised and appreciated this type of software the pupils who did not possess notational skills – that is, the majority – found it daunting

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[6] 'midi' stands for 'musical instrument digital interface'. It is an industry protocol which is used to send note 'information' to the computer. The note information must then be played back on another device. This contrasts with 'audio' where the actual sound is recorded on the computer.

(Ofsted, 2009). The following table summarises the environment, assumptions and characteristics of scoring software.

Types of software	Environment and Assumptions	Characteristics include:
Sibelius Finale PrintMusic	**Environment:** *a composer or arranger writing onto manuscript paper* **Assumptions:** *musical literacy and knowledge of musical instruments*	• the ability to produce professional looking scores and parts • the ability to input music in a number of ways, from clicking on the screen to playing in 'real time'. • the ability to play scores back in 'real time'

Fig 5: Characteristics of scoring software (adapted from Crow, 2007)

If these types of software were used at all in the curriculum they were mainly to be found at Key Stage 4 and beyond, called in to support pupils in the pursuit of their exam coursework (Ofsted, 2004). However, even in these contexts pupils and teachers struggled to articulate the technology effectively and consistently. As we shall see, teachers' lack of skills were overlooked in the introduction of such technology (Cuban). Moreover, the 'professional' nature of the programmes involved steep and often inappropriate learning curves. In 2002 an Ofsted report outlined patchy provision and limited application across the secondary sector (Ofsted, 2002). This had not appeared to change during the period of 2005 - 2008 when Ofsted found that, in the secondary sector, there was 'insufficient use of ICT in music' (Ofsted, 2009). This report also alluded to the well-known issue of resourcing: schools had difficulty keeping up to date in the rapidly changing world of technology. These and other issues surrounding technology in school are discussed in more detail later in the chapter.

However, during the past decade the nature and character of music software has changed. Powerful computers, fast Internet connections and music

compression techniques have become affordable and widely available (Taylor, 2001). This increase in capacity and connectedness along with the reduction in file size has enabled computers to process high quality audio in real time. The ability to easily handle 'sound' has meant that many people, who until now did not perceive themselves to be 'musical', can manipulate, create and communicate music using their computers, mp3 players and mobile phones. In tandem with these developments musicians, particularly those working in rap and dance genres, have increasingly made use of digital sampling techniques which borrow, fragment and reuse previously recorded sounds (Théberge, 1997). In response to these developments a new type of inexpensive music software has emerged which does not require 'traditional' musical skills or conceptual understanding. The software is attractively presented as a set of creative tools which offers a range of musical choices. The choices are drawn from banks of *readymade musical materials* which can be controlled in a variety of ways (Crow, 2006).

This is what I wish to call the 'new music technology' and it is exemplified in part by software packages such as GarageBand (Apple, 2009) and Sequel (Steinberg, 2010b). These differ from the previous 'open-ended' sequencing software in that they 'perceive of the learner as interested explorer. Here the software designer or the teacher provide a structured body of content that the learners then explore.' (Scrimshaw, 2001: 140). As such they offer the learner starting points and building blocks for their musical journey. They do this by making use of 'readymade' and 'repeatable' samples of sound (loops) as opposed to whole tracks of music. Typically the software allows the user to choose the loops from large instrumental and stylistic catalogues and assemble them by dragging and dropping them on a grid. The loops can be repeated, layered, triggered and enhanced with a range of effects and processes [7]. Some versions of the software, as is the case with Ableton 'Live' (Ableton, 2010), stress the ability to control and interact with the sounds so, in effect, turning the computer into a

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[7] The characteristics of GarageBand are more fully described in the next section.

performance instrument. The following table summarises the environment, assumptions and characteristics of such software:

Types of software	Environment and Assumptions	Characteristics include:
Dance eJay GarageBand Sequel Ableton	**Environment:** *A producer or DJ assembling a mix of recorded musical sounds* **Assumptions:** *The assembly of ready-made elements into a final mix which can be saved as an Mp3 file and played on the mobile phone or personal stereo or shared on the Internet.*	• the ability to *access* musical fragments (loops) from a pool of sounds, • the ability *to audition* and choose loops, • the ability to *assemble* loops by dragging and dropping them onto a grid. • the ability to be repeat, layer, alter and enhance loops with a range of effects and processes. • the ability (in certain versions) to interact with loops by recording and editing instrumental tracks, vocals or voice-overs.

Fig 6: Characteristics of loop based sequencing software (adapted from Crow, 2007)

This type of music software, which was fostered and developed in the 'real' musical worlds of the rap artist and dance DJ, is still relatively rare in the secondary music curriculum[8]. One indication of this is that only in the most recent manifestations of the GCSE syllabuses do we get some acknowledgement of loops and their musical use (this is discussed in the assessment and value section). However, programmes like GarageBand have started to make an appearance in music classrooms. Their characteristics suggest that they might

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[8] Dance eJay, an early example of this type of software, had some exposure in primary schools and the lower years of secondary, see: Dillon, T. (2006b), 'Hail to the Thief -The appropriation of music in the digital age'. In K. O'Hara and B. Brown (eds), *Consuming Music Together-Social and Collaborative Aspects of Music Consumption Technologies*. Netherlands: Springer, Gall, M. and Breeze, N. (2008), 'Music and eJay: An opportunity for creative collaborations in the classroom'. *International Journal of Educational Research, 47 (1),* 27-40

address some of the issues surrounding the musical engagement of the non-performing musician in the Key Stage 3 classroom. However, as discussed in Chapter 3, their acceptance by the music education establishment is still very much in doubt owing to what Philpott calls a 'dominant ideology' that assumes the nature of musical experience (Philpott, 2006).

2.3 – The context for GarageBand software

The software scrutinised in this research is related to a category of music software called 'digital audio workstation' (DAW). A DAW allows midi information and audio to be recorded, manipulated and edited. Most commonly the recorded music is handled through 'tracks' which carry the recorded musical 'parts'. The musical parts are then layered and placed in 'sequences'.

It is the DAW's ability to handle high quality audio, along with its provision of a total recording environment, which marks it out from the earlier music sequencers described above. In previous incarnations, sequencers only recorded midi 'note information' that was then relayed to external sound sources such as synthesisers and samplers and synchronised to recorded sound. Current DAWs usually have their own software synthesisers and samplers on board – often termed 'virtual' instruments – which can be manipulated through external controllers (most commonly piano-type keyboards). In addition, they can digitally process high quality audio both in terms of recording and playback.

This ability to play back audio material has led to the production of ready made audio materials involving musical phrases. These are often accessed as small sections of recorded sound. Because they generally have to be repeated to make musical sense they have been generically called 'loops'. The advent of loops has led software developers to produce programmes that deal mainly with the

manipulation of ready-made audio material. They are sometimes described as 'loop-based music sequencers'. However, the distinction between digital audio workstation and loop-based sequencer has become increasingly blurred with characteristics of both types of software merging into one.

The software places great demands on the computer's processing power and hard disc space. Hence older computers may not be able to run the programmes effectively. Moreover, as the software is updated to incorporate more features, so the computer may need to be updated or replaced. On the other hand, the total environment of the DAW does allow the musician to record, edit, process and master their music without the need for extra 'outboard' equipment. Certain DAWs only work on one computer platform, for example: Logic Studio (Apple, 2010c) only works on Apple Mac OS computers while Sonar Studio (Cakewalk, 2010) only works on Windows PC computers. Others, such as Cubase (Steinberg, 2010a), are cross platform.

Professional musicians have welcomed the quality and convenience of the DAW and, up until fairly recently, it has been presented as a professional tool for serious musicians. The literature promoting such software stresses this. For example:

> Millions of musicians worldwide—including Grammy® and Emmy®-winning producers, composers, sound designers, and engineers—use Cakewalk products daily to produce audio for the professional music, film, broadcast, and video game industries. (Cakewalk, 2010)

Hence, software packages such as Logic Pro and Cubase have served the needs of the able performing musician who is technologically literate. However, as

previously mentioned these professional tools often sit uneasily in the classroom. As Ofsted noted in 2004:

> A significant number of music departments purchase expensive sequencing software designed for professional studio use, when in most cases entry-level versions of the software would be adequate for the needs of the department. (Ofsted, 2004: 11)

Interestingly, in the same year as the Ofsted report, Apple announced a new application called 'GarageBand' (Apple, 2009) which dispensed with 'professional' connotations of previous DAWs. It was presented as part of their 'iLife' suite of applications – a collection of software for the amateur which was intended to simplify the creation and organisation of digital content on the computer. Whilst it was not the first loop-based sequencer to be made available – previous expressions include 'Fruity Loops' and 'Dance eJay' – its promotion and presentation encouraged many non-performing musicians to attempt musical creation for the first time. Unlike professional packages it provided ready-made content and a simple, easily accessible interface. Unlike the first loop based sequencers the sounds were of a high quality and choices and options were expanded.

Since 2004 it has been updated a number of times. These updates have forged links with other digital media such as the 'podcast', movie soundtrack and web-based musical sharing and communication. The musical capabilities have also been enhanced to include editing features, musical notation and expressive control. So far the programme appears to have done this without upsetting its simple interface.

2.3.1 – Aspects of GarageBand[9]

The name 'GarageBand' might be seen as deliberately ironic. After all, the original 'garage bands' often consisted of small groups of starter rock musicians who rehearsed 'live' in a garage. Their budding musicianship was usually expressed through the performance of rock music on guitars, vocals and drums. Hence, the name 'GarageBand' taps into the notion of young amateurs 'doing music for themselves'. However, the software's sophisticated handling of digital ready-made sounds appears to by-pass the mess of live group performance which characterised the original garage bands. It is clear that Apple, in choosing the name, wanted to tap into the 'authenticity' suggested by this version of rock music. In some ways the software does allow the non-musician to begin exploring their own music – albeit in a different musical context from the band in the 'garage'.

When you start using GarageBand you are asked if you wish to start a 'New Music Project' and you are invited to decide upon a name, tempo and key for your project. An initial screen then appears. This is an uncluttered block of three columns with a strip for 'transport' controls[10], information window and other icons along the bottom. One 'virtual' instrument –'Grand Piano'- is shown at the top of the screen. This is a software instrument which is built into the programme and can be played in real time by an on-screen keyboard or an attached midi instrument (see Figure 7).

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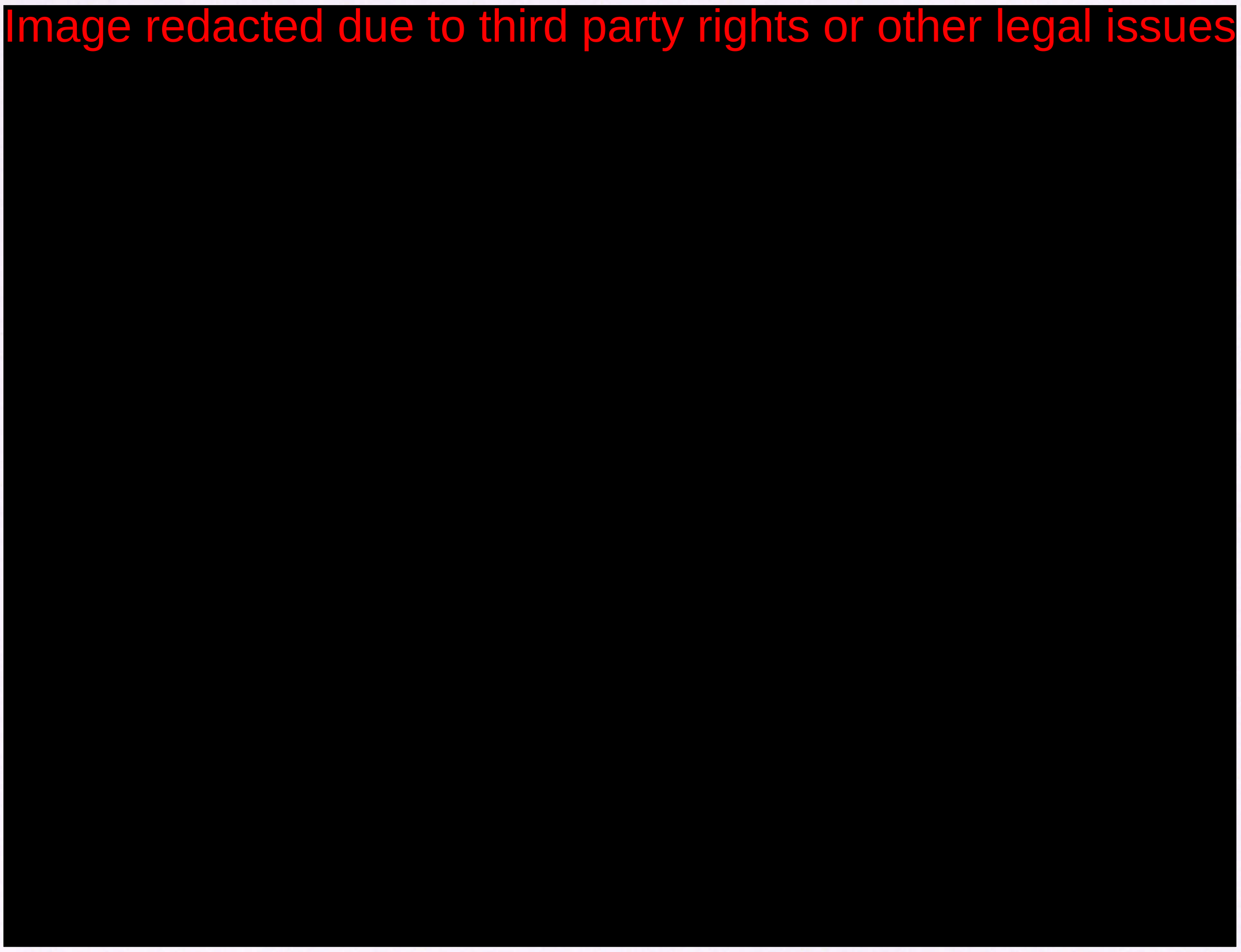
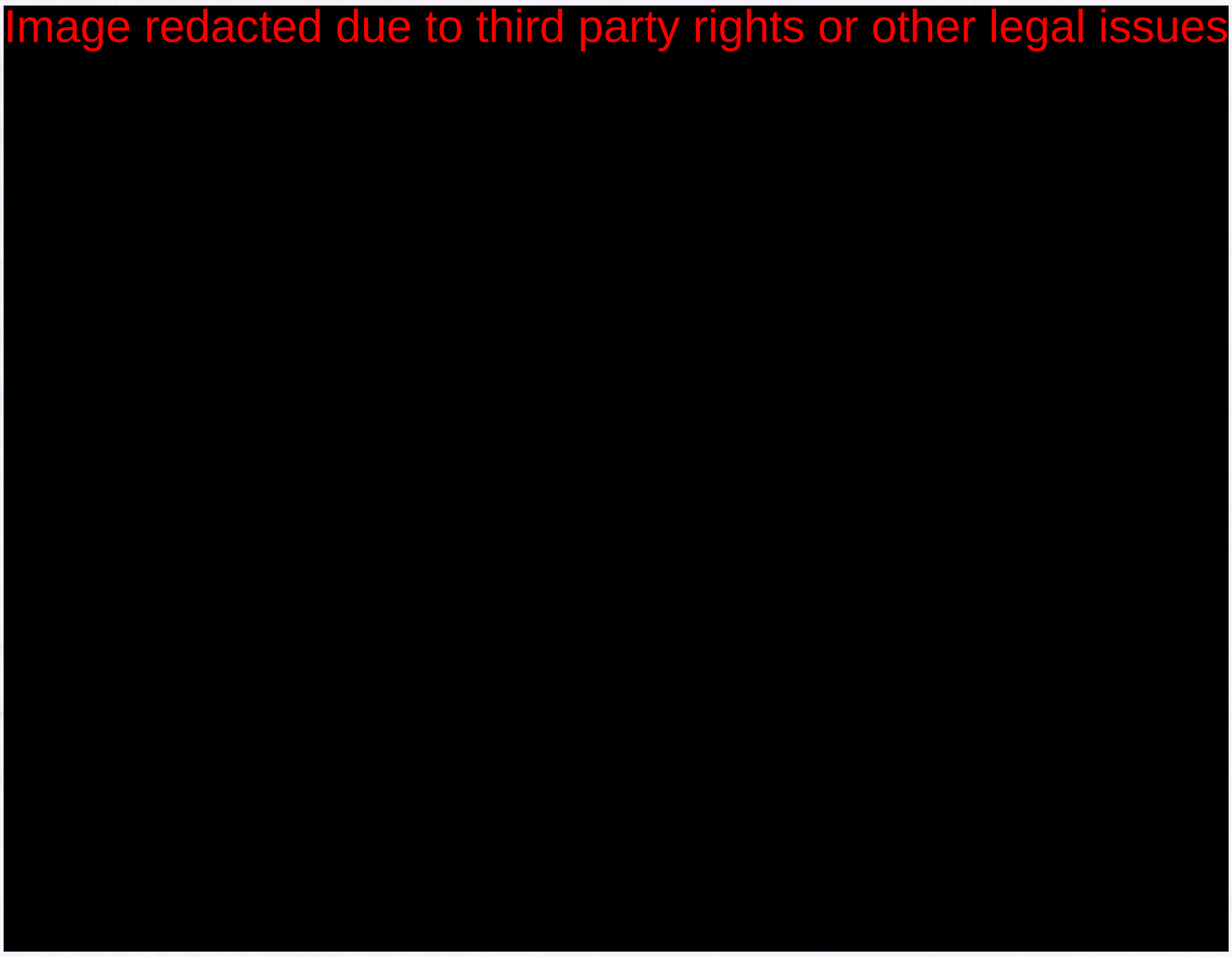
[9] The version of GarageBand used in these illustrations is version 4.1.2 (2008). The current version at the time of writing is 5.1 (2009)

[10] The 'transport' controls playback and recording, e.g.: start, stop, fast-forward, etc.

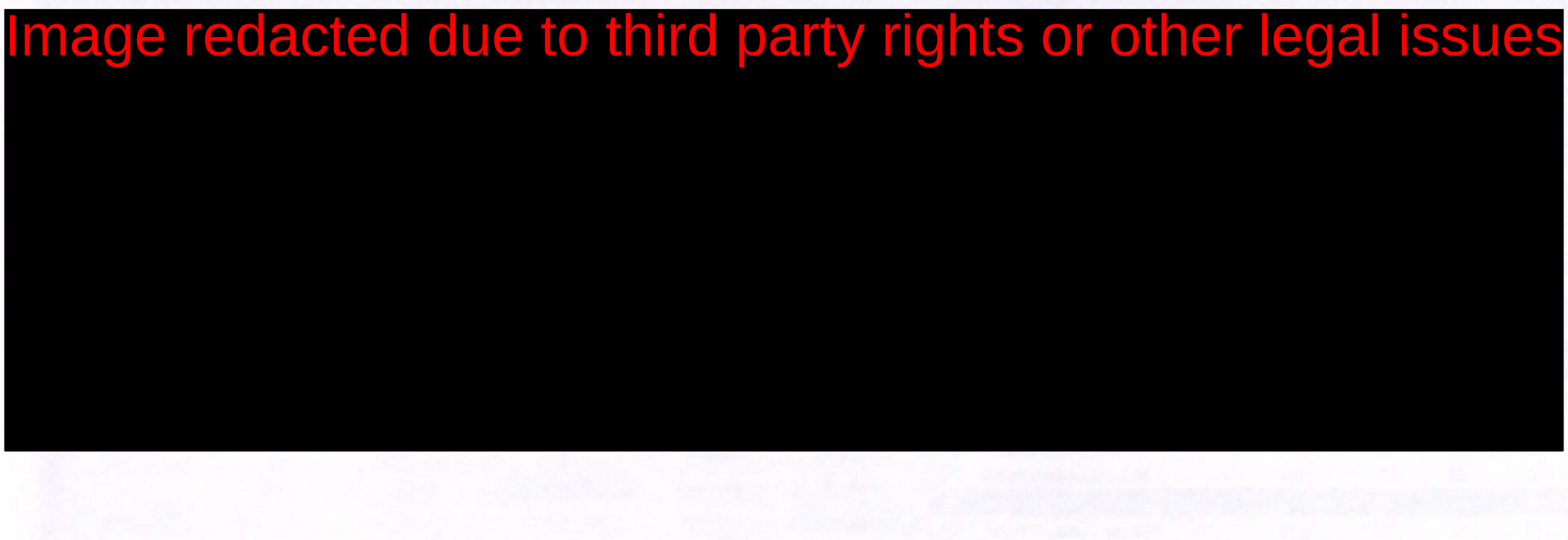


The columns from left to right show: the track name with an icon strip which controls recording, muting and expression; the track mixer with a 'knob' and 'slider' for controlling volume and pan; the musical content section where the music will be shown in strips, initially marked off as bars and beats. This interface is similar to many other musical sequencers with instrumental control on the left and the musical area on the right. However, unlike professional sequencers or DAWs, the interface is relatively streamlined. In fact, it could be seen as almost cryptic in its simple presentation.

More information appears when you click on the browser button (the 'eye' icon) in the strip at the bottom of the screen. This brings up the 'loop browser' (see Figure 8).



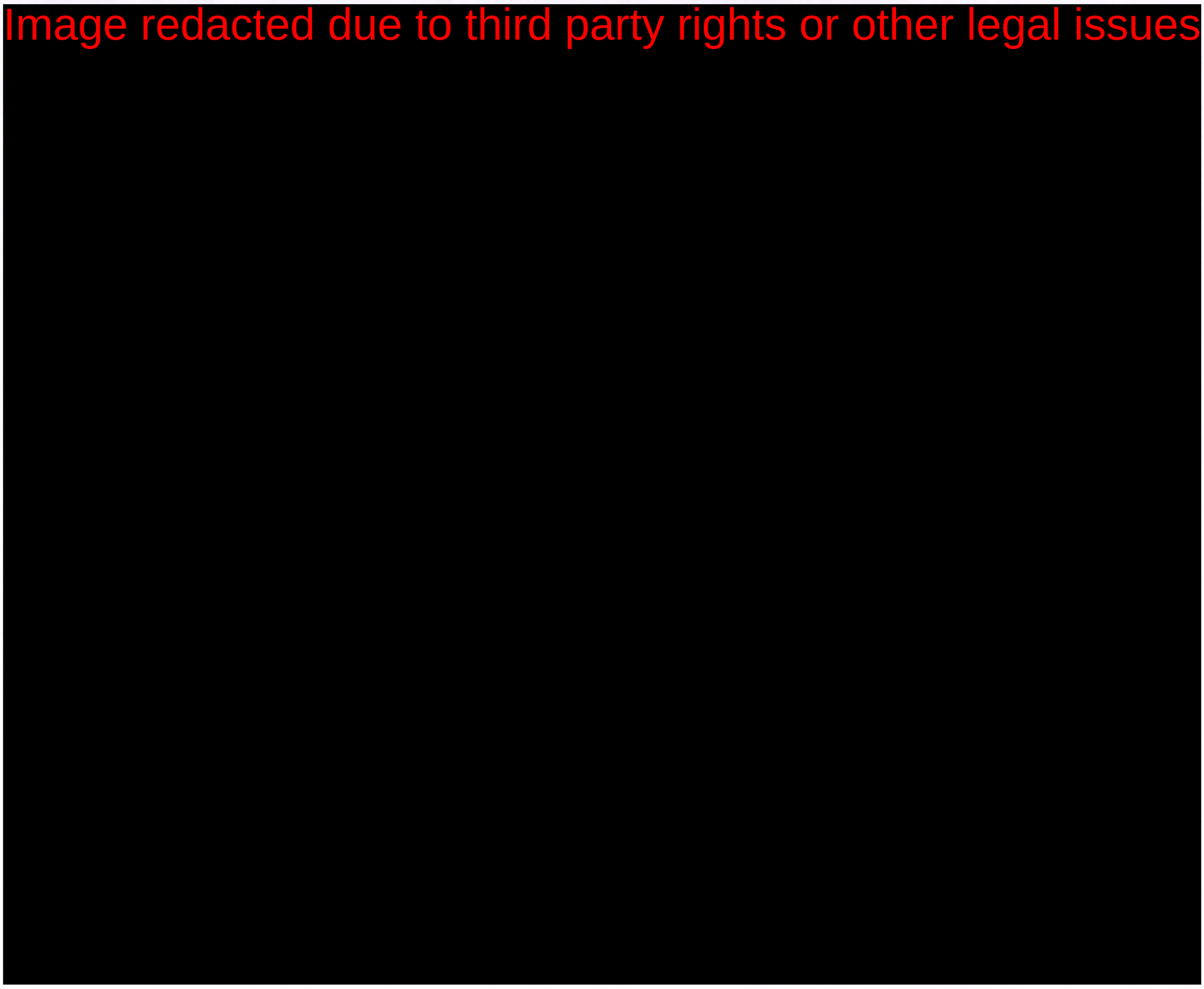
The buttons to the left of the window are labelled according to 'genre', 'instruments' or 'descriptors'. Clicking on a button will bring up a collection of 'loops' in the right half of the browser. These have been 'tagged' under the chosen label. By clicking on other buttons the choices can be refined. For example, by clicking on 'Guitar', 'World' and 'Intense' we get a range of possible guitar choices (see Figure 9).



The loop icon, seen to the left of the loop's name, can be either a 'note' or a 'waveform'. The note icon indicates that the loop is a 'programmed' midi file capable of being played back on a virtual instrument. The waveform icon indicates that the loop is a pre-recorded audio sample of 'real' musicians playing.

The loops also provide information about the original tempo, key and length of the music. However, one of the important aspects of GarageBand is its ability to alter these attributes automatically. Tempo and key will be modified by the initial choices made in relation to the overall song. Hence a loop originally sounding in C major will be automatically transposed if the chosen key is D major.

Loops are 'auditioned' by clicking on their icon. Once a choice has been made, the loop can be dragged and dropped into the 'musical content' area. A new track is created to accommodate the loop. Once in the content section, loops can be copied and moved. The following section shows the 'Asian Parade Erhu 04' loop placed at bar one, 'Brazilian Cavaquinho 01' loop placed at bar 3 and copied twice and the 'Asian Parade Erhu 06' loop in the process of being dropped at bar 4 (see Figure 10).

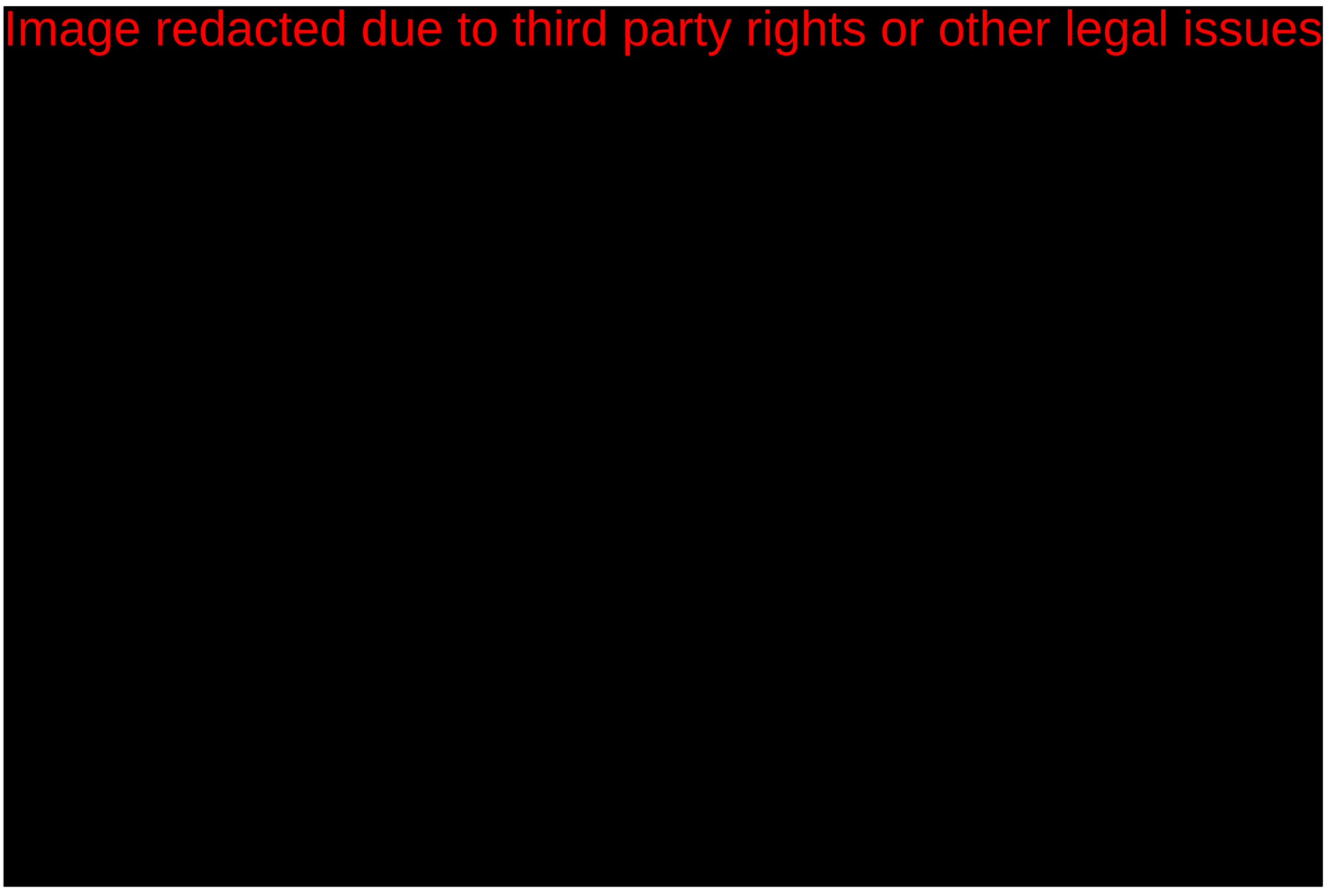


The number of loops available to users can vary. GarageBand comes with over 1000 musical loops in various styles, although the inbuilt selection favours popular and dance styles. To complement this, Apple and others provide so called 'Jam Packs'. For the research project, the pupils were able to access two of these extra packs, the 'World Music' pack and the 'Symphony Orchestra' pack. This meant that they could explore over 6000 musical loops.

The research in Schools 1 and 3 observed pupils solely using the music loop capabilities of GarageBand. However, it should be pointed out that loops and virtual instruments can 'perform' together. Returning to the 'garage band' analogy: part of your band – drums, bass, guitar, for example – could be supplied by loops while you perform in real time. GarageBand not only has the ability to capture midi performance using its virtual instruments and a midi controller. It can also capture live audio performance using microphones or other audio input. It is also possible to use GarageBand as an audio recorder and ignore the loops. For example, in School 2 the pupils were asked to play in (i.e. sequence) a short drum loop. At the end of the project they interacted vocally with their 'mixes' in a final recorded performance of their work.

2.4 – Theorising technology

The advent of a programme like GarageBand can cause a great deal of consternation in the public and educational spheres. Its intrusion into the aesthetic and emotional world of music creation challenges some core values and beliefs. For example, the following cartoon suggests a set of views about music technology:



The electronic keyboard appears to play unaided (possibly the boy has simply pressed the 'demo' button) and there is an absence of conventional musical 'performance'. And what sort of music might be playing? Although the boy is dressed like an orchestral conductor, might we assume that the music is some sort of electronic-sounding pop pastiche? The small captive audience – placed in their front room as opposed to the concert hall – display varying degrees of emotion: indulgence, boredom, fear. It appears that technology has 'taken over',

replacing human performance with machine-generated fakery (adapted from Crow, 2007).

This view, although becoming less common, is still part of the dialogue that society and its educators have in relation to technology. The opposite view – that technology is a panacea for all our ills – is equally prevalent. This section scrutinises some of these theoretical positions by looking at technology in relation to culture, education and music.

2.4.1 – Technology and culture

The way that technology impacts on culture has always been hotly debated. The views expressed often swing between opposite poles that see technology as either enslaving or liberating. Buckingham (2003) provides us with an example of the 'technology as enslavement' in his discussion of Postman's critique of television in the book '*The Disappearance of Childhood*' (Postman, 1982). As the title suggests, Postman saw the decline of print media and the rise of 'tele-visual' media as a threat to the very concept of childhood. He suggested that to acquire print literacy, children spend many years in apprenticeship and engage in 'reading' and 'analysing' texts. The television, on the other hand, was a 'total disclosure medium' which required no such skills or decoding. Moreover, it gave the child access to an adult world with all that that might entail. As Buckingham points out, Postman's views of technology were highly questionable. He states:

> Ultimately, Postman's views are that of the technological determinist: technology is seen to produce social (and indeed psychological) change, irrespective of how it is used. (Buckingham, 2003: 19)

The dichotomy between reading books and watching television might be seen to be paralleled in the tensions that exist between playing a musical instrument and using GarageBand to create music.

By contrast, Dertouzos, about fifteen years later than Postman, claimed somewhat hyperbolically that technology would liberate access to art. Discussing the CD ROM and the World Wide Web he states:

> The final dynamic the information market will bring to the creative world is the democratisation of art....suddenly all the world's art will be available to all the world's people (Dertouzos, 1997: 113) .

Dertouzos's view ignores the fact that access to technology is still conditioned by the widening gulf between rich and poor (Wilkinson and Pickett, 2009). However, it stands as an example of the 'hope' enshrined by the promise of technological futures. This optimism is often linked to the perceived 'newness' of technology, which in itself leads to high expectations and unrealistic claims. As Taylor points out:

> Technology... is usually accompanied by a discourse trumpeting its novelty and innovation. This practice speaks of one of the deepest ideologies surrounding technology.... that of progress and scientific advancement. (Taylor, 2001: 7).

The advancement of media technology over recent years has been profound. Buckingham points to a number of features that characterise the development. These include the 'proliferation' of screen based technologies (digital TV and video, games, mobile phone, computer programmes, the

Internet), the 'convergence' between information and communications technologies (online shopping, on demand TV, internet chat) and the 'access' that most people have to what was once expensive equipment (digital cameras, powerful laptop computers, mp3 players). This will blur the boundaries between 'production and consumption' and between 'mass communication and interpersonal communication' (Buckingham, 2003: 23)

That commercial interests drive these developments may be a cause for concern. For example, GarageBand and the suite of 'iLife' (Apple, 2010b) programmes that accompany it are bundled free with every new Mac computer. However, they only work with a Mac computer. This attempt to corner markets is very much a feature of development of the digital world[11]. Another fear is that the proliferation of these technologies will erode our culture. Slack and Macgregor Wise suggest that thinking of technology and culture in terms of causation is a widespread practice. As we saw in Postman's view above, its most common form is that of technological determinism. As they state:

> Belief in technological determinism is widely held in Western culture. For a very long time, in fact as long as there has been recorded history, people have been thinking about technology as primarily responsible for major cultural change. (Slack and Macgregor Wise, 2005: 43)

However, they also point out that the reverse of this position – cultural determinism – also holds sway in popular discourse. Here 'the values, feelings, beliefs and practices of the culture cause particular technologies to be developed and used,' and that 'changes in the culture result in changes in the technology' (ibid: 46). They suggest the need to move beyond these narrowly causal views of technology and culture by proposing the use of an expanded concept of 'agency'.

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[11] The so-called 'Browser Wars' was an example of this. See: http://en.wikipedia.org/wiki/Browser_wars for a resume.

Here they want to move beyond the dictionary definition, which 'reduces agency to a thing, a possession of the agent' and recognise agency as 'a process or a relationship'. This expanded view posits that: 'First, agency does not require human intention, which means that technologies can also be involved in relations of agency. Second, agency is not a possession of agents; it is a process or a relationship.' (ibid:117). The context of the school and our views of teaching and learning are key sites for working out these tensions between technology and culture. It is to technology and its articulation in schools that we now turn.

2.4.2 – Technology and schools

Many – taking the 'technology as liberating' view - have promoted the introduction of technology in schools. For example, a number of commentators (Illich, 1971; Papert, 1980; Tapscott, 1998) have predicted that technology will change the nature of intelligence and transform, or replace, the education system. However these predictions have not come true and, as Buckingham reminds us:

> For better or worse, the school as an institution is still very much with us, and most of the teaching and learning that happens there has remained completely untouched by the influence of [digital] technology' (Buckingham, 2005: 2).

In the light of this apparent 'failure', writers such as Cuban and Selwyn questioned what they perceive as an uncritical acceptance of technology in educational contexts. Selwyn points to corporate involvement and government funding in relation to the growth of technology in schools aided and abetted by a somewhat uncritical acceptance of the rhetorics of the 'information society' (Selwyn, 2002), while Cuban notes that teachers have remained outside the

decision making process (Cuban, 2001). Moreover, funding has tended to focus on hardware, software to a lesser extent and, as an afterthought, on teacher training. Buckingham points out that 'truly high quality educational software' remains in short supply. Add to this the lack of technical support, incompatible formats (for example, Macs versus Windows) and the continual need to upgrade both machine and software and the picture of computers in schools begins to darken. These, for Buckingham, are:

> ....not merely technical difficulties, but phenomena that are endemic to an industry whose ability to generate profit is fundamentally premised on planned obsolescence'. (Buckingham, 2005: 7)

The problem, however, is not just with schools. Computers are marketed to parents as being essential for their child's educational success. Buckingham points out that those parents who can afford to invest in computers do so in the expectation that their children will gain an advantage in the educational race. (Buckingham, 2003)

When technology is used more or less effectively in schools there arise issues related to organisation, skills, pedagogy and gender. Julian Sefton-Green tackles a number of issues relating to the democratic potential and distribution of digital creativity across the school curriculum. He notes that successful projects are heavily intensive in terms of time and resources and limited by school organisation and assessment demands. He also asks a number of significant questions about the evaluation of creative work in new media more generally: 'Do we evaluate students' grasp of authoring packages or their capacity to imagine in the new medium?' (Sefton-Green, 1999: 149). Some of these issues are scrutinised in the course of this research. In particular issues relating to ease of use and the value pupils and teachers attach to GarageBand processes and outcomes are analysed below.

The skills required to effectively make use of the technology raise issues relating to expression, creativity and pedagogy. For example, the new music technology as expressed by GarageBand, does not require traditional musical skills and understanding. However, some sort of 'skills set' is necessary to articulate a creative response using the technology. Current 'A' level Music Technology (EdExcel, 2008) syllabuses take an approach which emphasises the skills set of the studio engineer - what Buckingham refers to as 'the rules and routines of professional practice' (Buckingham, 2003).

Just as in traditional musical learning, getting the balance right between skills and expression might be problematic. Part of the dilemma concerns the nature of the technical skills required and how and when they should be learned. The pedagogy relating to this area is still unclear. A somewhat mechanical approach – which emphasises dry de-contextualised exercises in technical set ups, file organisation, saving and so on – must surely inhibit motivation and creative response. However, not knowing these elements might lead to the frustrations of limited musical input, poor sound reproduction or lost work. Buckingham suggests that there needs to be a *translation* from the "passive" knowledge that is derived from viewing or reading to the "active" knowledge that is required for production and writing (Buckingham, 2003). Some elements in the 'learning' that emerged during the three GarageBand projects suggests that the need to know 'musically' led to the acquisition of technical knowledge.

The issue of how gender and social class interact with technology in school is part of the landscape of learning. A number of commentators (Comber, Hargreaves and Colley, 1993; Colley and Comber, 1997; Green, 1997) have found that girls express lower levels of confidence in relation to the manipulation of technology in musical settings. This appeared to be particularly apparent in co-educational contexts. However, much of this research pre-dates the rise of newer technologies – such as the mobile phone, digital camera, the Internet and

GarageBand – where girls may appear to be more adept than in the past. Although not a prime focus of the current research there was no appreciable difference in terms of gender response to working with the technology. Nevertheless, an awareness of the gendered presentation of music software and its effects on pupils' perceptions needs to be borne in mind when discussing the area in general terms. In a recent thesis Armstrong strongly argues that:

> 'Symbolic masculinity' and 'material men' retain their hold on technological artefacts, expertise and knowledge. As such...(they) have a profound effect on the way adolescents compose music when using digital technology. (Armstrong, 2005: 2)

It is possible that certain expressions of musical technology – in particular those such as Cubase and Reason, which have their genesis in the male-dominated world of the studio professional – exhibit an embedded cultural masculinity. This needs to be considered when analysing contexts where girls interact musically with digital technology.

Regarding issues relating to social class and inequality, Buckingham supports the notion, mentioned above, that technology, while apparently democratic, can equally exclude and disenfranchise children who do not yet have access. He also points out that:

> The commercialisation and globalisation of media markets, the fragmentation of mass audiences and the rise of 'interactivity' are all fundamentally transforming young people's everyday experiences of the media. In this new environment, children have increasingly come to be seen as a valuable target market for the media industries (Buckingham, 2003: 15).

Craft develops this notion and points to the pace of change in a global economy as being both the outcome of creativity and the engine for yet more creativity. The 'newness' of certain technologies does chime with the needs of the global market economy. As Craft states: '... within the global economy novelty and invention is in and make do and mend is out' (Craft, 2005: 10). This is echoed by a supplement that appeared in the Guardian newspaper during the research period which was entitled: 'Create and motivate: using technology to encourage creativity in class'. In a celebration of new hardware and software (sponsored by Apple) it stated that:

> ...teachers, pupils and parents are embracing creativity armed with some very useful new tools. All around the UK schools are seeing remarkable levels of engagement and effort resulting from quite specific focus on creative activity. (Heppell, 2006)

While this may be true in certain schools, the availability and value of the 'tools' is by no means apparent in all schools. In 2004 Ofsted reported that:

> Developments have taken place in spite of a majority of music departments being under-resourced. Although most possess adequate numbers of electronic keyboards, these are not always of sufficiently good quality to enable pupils to carry out sequencing and recording. It is rare for a department to be equipped to a level that allows whole-class use of music technology equipment at Key Stage 3 (Ofsted, 2004: 4).

It is also worth noting Heppell's focus on technology as a useful new 'tool'. As Slack and Macgregor Wise remind us:

> Tools do matter; however, it is not only tools that matter...You can't put a technology developed in one context into another, and expect it to perform in the same way. Context matters too. (Slack and Macgregor Wise, 2005: 80)

We are once again reminded that in the past a number of music technology 'tools', developed for the professional music industry, have found their way into the context of the classroom.

2.4.3 – Technology and music

> Should we not fear this domestication of sound, this magic that anyone can bring from a disc at will? Will it not bring to waste the mysterious force of an art which one might have thought indestructible? (Claude Debussy on the gramophone,1913, quoted in:Watson, 1994: 390)

Debussy's 'fear' and dislike of the music technology – in this case the emerging technology of the gramophone - has been shared by other musicians with regard to the intrusion of technology in the consumption of sounds (Schoenberg, 1975) and its use in music creation (Boulez, 1968).

In an echo of the deterministic debates relating to culture and technology, musicians have been anxious about the way the nature of music creation and engagement will be changed by technology. As Taylor reminds us:

These anxieties have at bottom serious questions about humans and humanity. Two most salient of these questions are: to what extent does technology diminish human agency? On a larger scale to what extent does technology have the capacity to turn human history into its own history? (Taylor, 2001: 201)

These are important issues to bear in mind for it is clear that technology is dramatically shaping the way music is produced, stored, distributed and consumed (Katz, 2004).

Of course, 'technology' has had a hand – and continues to have a hand - in developing many of the 'acoustic' instruments in use today (for example, the Boehm-system clarinet). However, as Théberge points out, most of these 'traditional musical instruments exhibit relatively simple design principles' and 'their sound mechanisms rely on a more-or-less direct relationship between player, technique and instrument' (Théberge, 1997: 2). These connections are distanced with the new breed of electronic instruments – synthesiser, sampler, drum machine – where what produces the sound and who controls it are largely independent of each other. This relationship is further distanced when musicians use pre-recorded sounds – the loops and samples of the new music technology – to form the basis of their compositions. They become at once consumers and creators in relation to these ready-made sounds. For Théberge the new technologies pose two kinds of problems for musicians:

On the one hand they alter the structure of music practice and concepts of what music is and can be; on the other, they place the musician and musical practice in a new relationship with consumer practices and the consumer society as a whole. (Théberge, 1997: 3)

In his book *Capturing Sound* Katz explores the impact of digital technologies such as sampling and the mp3 file on musical creators and consumers. He points out that the barriers between composer, performer and listener could be breaking down and suggests that new concepts relating to the 'listener-performer' and 'listener-composer' are now possible (Katz, 2004). This was certainly apparent in the research and is discussed in detail in relation to 'listening' in Chapter 3. Issues relating to 'sharing' or 'stealing' also emerge in this context. It is one of the most polarising and contentious areas surrounding digital technology. Thomas Goetz has made the case for copyright-free sharing and pointed to new organisations such as 'Creative Commons' which allow artists to open their work to others. He states:

> At root, sharing and stealing music start from the same impulse: Cribbing is creation. Building on what other musicians have done – with or without their blessing - is what it takes to make new music (Goetz, 2004).

Once the concept of musical borrowing is accepted we also have to be aware of the social context and historical background of the many musical practices that have utilised these musical approaches. For example, Brewster and Broughton have described the advent of a range of musics - including 'toasters' in Jamaica, American hip hop musicians and dance culture DJs – that make extensive use of musical borrowing (Brewster and Broughton, 2000). Interestingly the turntable – the descendant of the gramophone 'feared' by Debussy – is at the creative heart of these musics. It has been turned from an object of consumption to one of production. As Taylor points out:

> The rise of hip hop and dance music DJ...redefined the function of the turntable: no longer simply a reproductive device, it became a productive one as well. Human agency struck back. (Taylor, 2001: 204)

No doubt there are those – for example, music teachers who are trying to promote the principles of the breadth enshrined in the National Curriculum for England and Wales (QCA, 2007) – who will perceive of a narrowness of musical action and expression inherent in genres such as hip hop and dance music. To counter this, Savage's work on 'sound design', linking digital audio to film and other extra-musical contexts (Savage, 2005), suggests that musical processes and outcomes involving the new technology can encompass a range of musical expressions. As mentioned above, Apple expanded its range of musical sources by releasing a additional 'jam packs' for GarageBand in an attempt to broaden the programme's appeal (Apple, 2010a).

Aware of the cultural dissonance that pupils might feel in relation to music learning in the formal school context, some practitioners and researchers have looked to digital technology for answers. Baxter, aware of the absence of links between school music and life outside school, sought to connect the musical lives of his pupils by utilising pop music genres, software and personal mobile phones (Baxter, 2007). This move beyond the classroom, which is one of the great attractions of technology, can lead to a blurring of where learning happens. Challis, aware of the need to find alternative approaches to promote creativity in disaffected youths, explored DJ-ing techniques in an out-of-school referral unit (Challis, 2007). However, it has to be said that emerging classroom pedagogies, while emphasising the conventional rock band practices and informal approaches of the original 'garage band' (Green, 2008) appear to overlook digital music practices. As Vakeva points out:

> Such practices as DJing/turntablism; assembling of various bits and pieces to remixes; remixing entire songs to mash-ups in home studios; collective songwriting online; producing of one's own music videos to YouTube; exchanging and comparing videos of live performances of Guitar Hero and Rock Band game songs – all of these indicate a musical

> culture that differs substantially from conventional 'garage band' practices. (Vakeva, 2010: 63)

The research presented here attempts to interrogate some aspects of this musical culture that appears to promise a more democratic, inclusive and personalised musical engagement, which bypasses the traditional musical skills and which offers more children the opportunity of musical creation. If Taylor is correct it will:

> ...quickly become part of social life, naturalised into quotidian normality as it helps people do things they have always done: communicate, create, labour, remember, experience pleasure and, of course, make and listen to music. (Taylor, 2001: 206)

However, as always a number of important and searching questions need to be borne in mind when interrogating and evaluating technology. Like Finney and Burnard I feel we need to ask:

> What is this change for? What will be improved? How will worthwhile human values inherent in the act of making music – such as the experience of timelessness, reflection, mutability, empathy and endurance – be preserved and sustained in a digital age? (Finney and Burnard, 2007: 2)

2.5 – The new music technology in the classroom

This section interrogates how GarageBand worked in the classrooms that were observed. It focuses on evidence relating to the technology's ability, or lack of ability, to engage the pupils and facilitate their musical activities. The evidence is drawn from the observational and interview data garnered in the three research schools (see Chapter 1 for details). The observations contextualised and confirmed the pupils' and teachers' response at interview. The areas discussed and analysed in this section emerge from a selection of responses to the questions: ' What do you like about using GarageBand?' and 'What don't you like about using GarageBand?' (see Appendix 1c and 1d) Other responses to these questions are dealt with in future chapters.

The analysis begins by drawing on observational evidence to describe the similarities and differences between the three schools in terms of resourcing, setting and learning context. There then follows a qualitative analysis of the pupils' and teachers' positive and negative response to GarageBand. The section concludes by summarising the findings and discussing some of the resulting issues relating to the technologically mediated classroom and the roles of the pupil and teacher within it.

2.5.1 – Observing GarageBand in the classroom

The three sites for the research shared certain characteristics[12]. The observations discussed here were of general timetabled music classes taking place at Key Stage 3. The scheme of work in each instance lasted approximately six weeks and one class teacher worked with the whole class in each setting. There were no 'break-out' spaces in which the pupils worked. All the work was carried out within the four walls of one classroom. Each classroom had a white board connected to a computer for display purposes. This was the first time that the departments had used the new technology at Key Stage 3. Previously the pupils had experienced more traditional music lessons involving activities such as playing keyboards, singing and group instrumental work. Observations mainly consisted of viewing teacher-led instruction, modelling, facilitation, intervention and feedback and observation of the pupils working in pairs and trios when engaged on the practical task. Toward the end of each scheme of work, usually in the fourth and fifth week, one-to-one interviews with the pupils took place. The interviews were conducted during the lesson with the interviewees being chosen at random from the class register. After the scheme of work had concluded I returned to each school and interviewed the teachers involved in teaching the lessons.

However, the schools varied in a number of resourcing and setting details. In School 1 the technology classroom was housed in a small and somewhat cramped classroom space.

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[12] The empirical details of each school setting is detailed in Chapter 1.

Fig. 12: School 1 resources and setting

Once the twenty-four pupils inhabited this space there was little room for manoeuvre. Pupils attended to the teacher from their workstation. At the time of the research there was an assortment of 12 older style Apple iMac computers in the classroom. However, not all of the computers shared the same features, capacity or speed. As a result, only nine of the machines were available to run the GarageBand software. This meant that in certain instances pupils had to work in threes as opposed to pairs. Figure 12 shows a range of interfaces, mixers and keyboards attached to the computers. Such technological additions can be confusing and often lead to technical difficulties. However, they had been put in place to address the needs of older pupils taking exam courses. The Key Stage 3 pupils did not use the keyboards or interfaces during the research period. Headphones were added during the course of the second week of the research period.

In School 2 the technology classroom was split into two areas. The smaller of the two areas allowed the pupils to sit on the floor as a whole group and face the whiteboard. The larger area housed the computers in four parallel rows.

Fig. 13: School 2 resources and setting

All eighteen of the computers were new Apple iMacs that had been recently purchased. Hence they all shared the same capacity and features and were in working order. Each workstation had a single USB keyboard attached and sported a pair of headphones. Figure 13 shows that the clear-cut layout, and the absence of boxes and wires make for a more welcoming and user-friendly environment. It is also easier to monitor pupils' progress. The thirty plus pupils moved between the two spaces, from formal to less formal modes of interaction with the teacher and their pupil partner. In this school the pupils were asked to

play the keyboards at the beginning of the project and to rap/sing along with the computer at the end of the project.

In School 3 the technology classroom was a large space that had been recently adapted from being the main music classroom.

Fig. 14: School 3 resources and setting

Unlike the two classrooms described above the room contained a selection of traditional instruments – piano, timpani, and classroom percussion. Figure 14 shows the somewhat 'bolt-on' nature of computer placement. The ten Apple Mac computers were set out along two adjacent walls. The central area of the classroom was laid out with seating in rows facing a third display wall of two whiteboards. The twenty plus pupils moved between these two areas. The computers had just been purchased and, as in School 2, shared the same capacity features and user friendliness. Pupils generally worked in pairs although this was somewhat fluid. On occasion pupils worked on their own or in threes.

2.5.1.1 – School 1: Observation and discussion

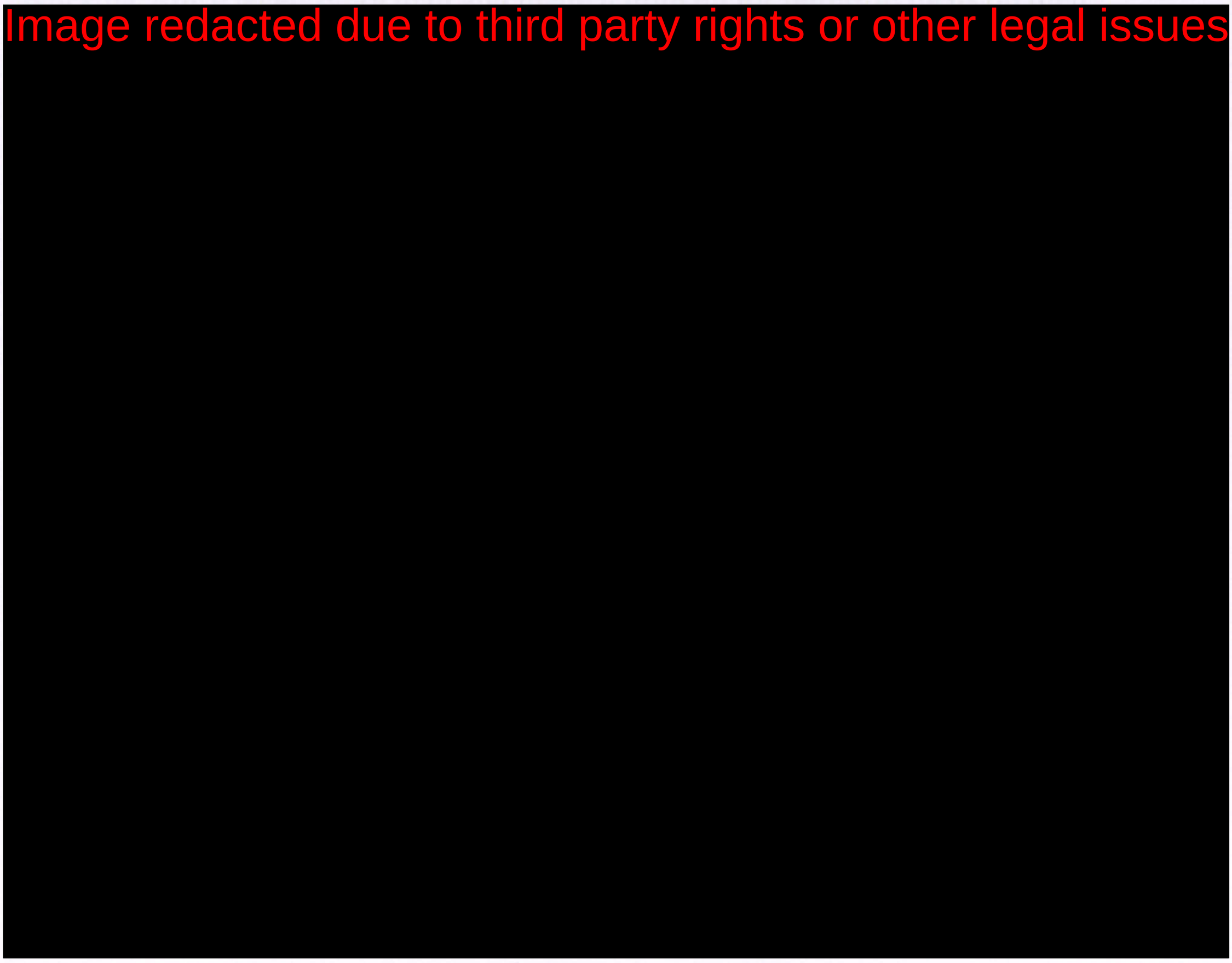
The teaching and learning focus for the scheme of work consisted of the somewhat traditional starting points of 'the instruments of the orchestra' and 'form and structure'. The pupils were to explore and choose instrumental idioms and timbres linked to 'strings, woodwind, brass and percussion' and place them in a Rondo structure of ABACADA. Each musical section of the Rondo had to be eight bars in length and consist of the same 'family' of instrumental timbre. In the event, the pupils' choices were not restricted to traditional 'orchestral' sounds and included idioms and timbres drawn from 'pop/rock' and 'world' music.

The practical task consisted of the pupils working in pairs or trios. They auditioned the various loops, agreed on a choice and placed the musical section in the content section of the screen. No instructions were given on how the pupils should work together and there was very little discussion of 'success criteria'. Criteria arose out of the fact that pupils should: choose instrumentally associated timbres within sections; make each section eight bars long; make the overall pattern of sections conform to the given Rondo pattern. The issue of 'creativity' was not discussed overtly. There was perhaps an assumption that the pupils' choices and the layering and patterning of those choices would provide creative opportunities and 'ownership'. In the event, as we shall see in Chapter 5, some of the pupils went beyond the restrictions placed on choice by the teacher.

The teaching and learning context was easily grasped by the pupils and put into practice using the software. The contradictions of the musical materials (classical form and instrumental category) with their means of articulation (technology, garage band, pop/rock idioms etc) are perhaps too obvious to point out here. On the one hand it highlights the schism that exists between musical learning in the classroom and the world of music as experienced by pupils outside the classroom. On the other hand it could be argued that this was a

refreshing approach to standard music education fare which harnessed the technology in a re-articulation of some fundamental musical principles[13]. In practice the pupils had little observable problem coping with the task in hand. Furthermore the musical outcomes traversed a range of musical idioms.

The limitations of the equipment outlined above could be seen to have an impact on pupil interaction. As figure 15 shows, some pupils – who worked in threes or 'trios' – could be seen to have problems in engaging equitably with the task.



The pupil who was physically distant from the computer interface was often observed to be taking less part in making musical choices. By contrast the pupil

[13] See Chapter 3 for a fuller discussion of the dissonance surrounding school music.

who had 'mouse control' appeared to be more engaged with the interactive choices. However, in other instances pupils organised themselves differently. For example, one trio arranged themselves in a straight line to the screen while another pair swapped mouse control. There was no teacher instruction on who should do what or how choices should be shared out amongst the participants. This reluctance on the part of many music teachers to offer guidance in relation to musical roles in pair and group work situations is also common in more traditional practical classroom projects. While this could be seen as part of an attempt to develop cooperative learning in an informal setting, it might also be seen as leading to problems relating to inclusion, equity and effective learning. The absence of headphones in week one also impacted on the pupils' way of working. Noise levels were high and made it difficult for pupils to focus on their own choice of 'sounds'. Some pupils could be observed 'wandering' into adjacent groups' discussions and choices. In the following sessions, with headphones provided, it appeared that pupils engaged with each other more readily, although issues of 'choice control' remained.

For the most part, the pupils appeared to be motivated and engaged by the musical context provided by the, albeit limited, resources. A lot of lively discussion went on and choices were shared and debated. Some pupils clapped along with the rhythms and found a degree of humour in the choices offered. The software was easy to grasp and few technical problems arose. The only issue in the first week was that not all the computers could access the range of loops available. It also transpired that the loop browser categories did not initially include a choice pertaining to 'woodwind'. While it is easy to set up such categories in the software, this initial absence led to some confusion.

The teacher's role was one of initial instruction and reminders followed by monitoring the group work task. This was achieved in a number of ways. Observation of the work onscreen could show if pupils understood phrase length. It also could demonstrate if pupils (who had mouse control) had a

technical grasp of handling the loop browser. Monitoring the work aurally could ascertain if pupils were choosing appropriate instrumental groupings. The teacher used Apple Remote Desktop software to aid him in tracking the pupils' work. While this allowed him to remotely see all the pupils' screens on his laptop it tended to distance him from the pupils' engagement. The software also allowed the teacher to gain attention by 'locking out' the pupils from their computers when he wished to intervene. These interventions – which might be seen as interrupting workflow and possibly disgruntling pupils - were an attempt to provide further models and clarify criteria. The fact that pupils' work-in-progress could be shown to the whole class on an overhead projector and heard via the audio system helped in refocusing the pupils.

2.5.1.2 – School 2: Observation and discussion

The teaching and learning focus for the scheme of work consisted of a number of elements that were directed towards the creation of a backing track to support the performance of a Rap. These included the sequencing[14] of a short drum loop for Bass, Snare and Hi Hat percussion, exploring contextual information about Rap, learning about the structures used in Rap songs, choosing and arranging loops to make a rap backing track, writing lyrics for the rap backing and performing along with the rap backing. This was a much more structured approach to learning than had been evident in School 1. Pupils were given slices of formal learning throughout each lesson that exhibited elements of traditional music teaching. The pupils were provided with a lot of support materials (e.g. models, task sheets, etc) and suggestions were given on how they might articulate the task in musical terms. Some aspects of the work (e.g. information about Rap, lyrics for the rap) had to be completed outside of the classroom. Interestingly, although the teacher was highly organized and exhibited many formal approaches, the nature of the topic sat more easily with the technology.

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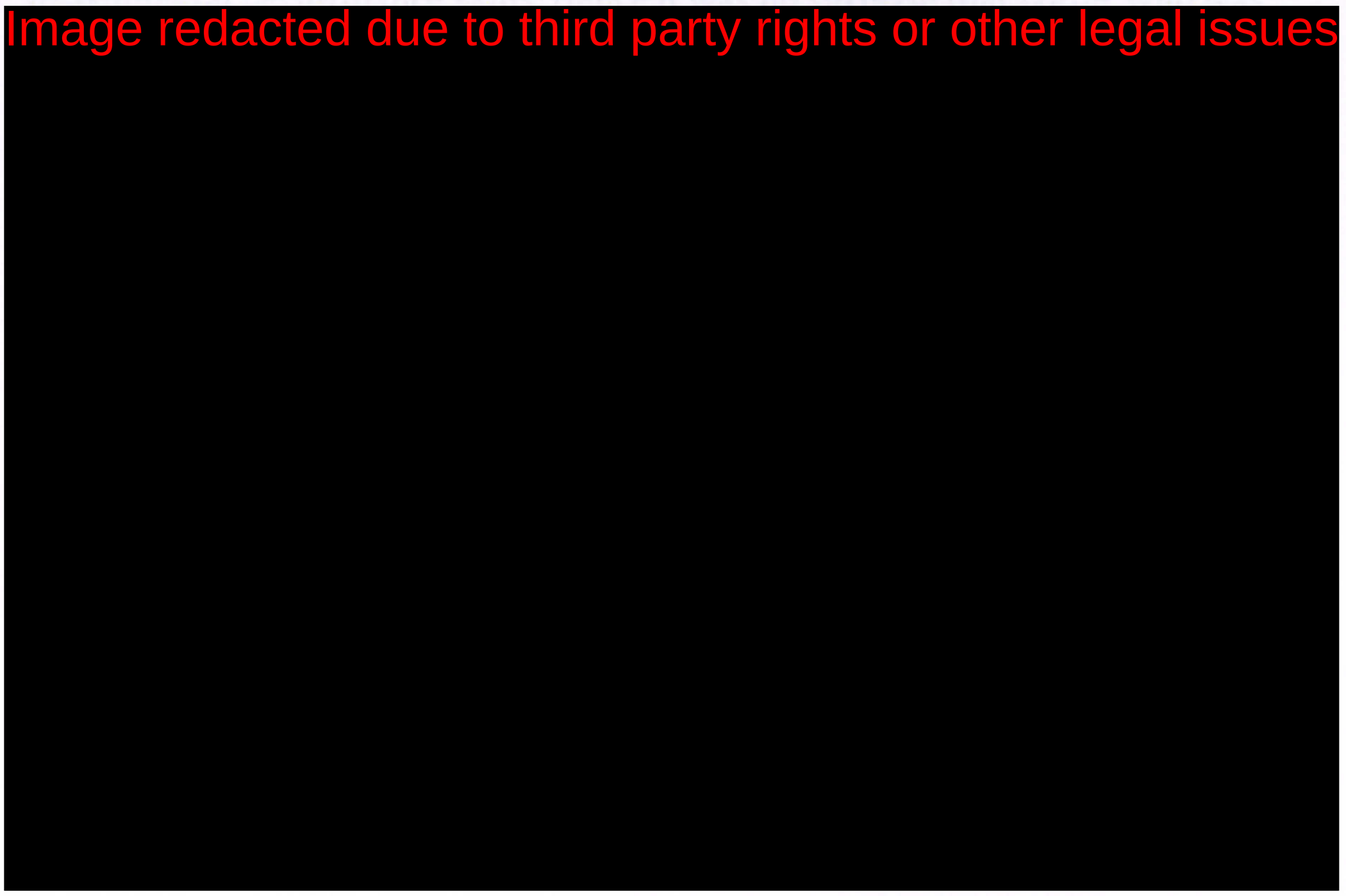
[14] Playing the notes into the computer from the attached piano style keyboard.

This project also included performance elements. The only change in planning between the two classes observed was that the teacher spent more time preparing the second group for performance.

For the practical task the teacher placed the pupils in pairs according to alphabetical grouping. The initial task consisted of pairs working on 'sequencing' the drum loop. After this they worked on choosing and arranging the musical loops in a similar fashion to School 1. When the pupils were engaged at the computer they worked on headphones. As in School 1 there was no instruction relating to 'role' (i.e. who does what) within each pair. However, the teacher in School 2 did provide success criteria for the tasks and kept reminding pupils what was required 'to get it right' and where they 'should be' in relation to the overall task. 'Listening' to the loops was stressed and the teacher introduced the idea of instrumental 'coherence' – that is choosing sounds from similar family groups (e.g. 'acoustic' bass as opposed to 'electric' bass). As in School 1 the issue of creativity was not overtly discussed, but as we shall see in Chapter 4, the pupils felt quite a high degree of creative ownership as the project progressed. Figure 16 demonstrates some of the features outlined above and suggests a closer working relationship than that provided by the previous trio of pupils.



A feature of this set of observations was the inclusion of a range of whole class activities. These included all the pupils engaging in clapping drum patterns in preparation for the practical task, sharing information about rap (gained as a homework exercise) and performing the rap to the rest of the class. The teacher also engaged in a fair degree of interactive modelling making much use of the interactive whiteboard linked to GarageBand. The teaching had many of the characteristics of effective teaching identified by Ofsted (Ofsted, 2009).

The initial practical task – sequencing a drum track – proved problematic for many of the pupils. While it had been well prepared and modelled by the teacher the pupils found playing to a 'click track'[15] difficult. This resulted in the drum sounds being out of time, in particular the 'hi hat' pattern of eight consecutive quavers. Some pupils did not know when to stop playing, leading to uneven phrase lengths. An intervention by the teacher suggested using the editing feature in GarageBand but this proved 'fiddly'. The issues surrounding this type of older musical technological approach are discussed above. They demand schooling in a certain way of working and ultimately require instrumental performance skills. Hence it was no surprise that Lottie, who was taking percussion lessons outside class, completed the task quickly and required an additional extension task while the others 'caught up'.

By contrast, the handling of loops in later lessons involved no such barriers. Pupils were highly motivated and generally succeeded in the tasks. The discussion of the loops resulted in animated pair-talk and the screen appeared to be easy to navigate. The teacher allowed for a more informal learning mode to take over here. Her role on these occasions was to monitor and facilitate individual pairs. The only observable issue was that with such a large class the

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[15] A click track provides a metronomic pulse to support playing in time with the computer.

teacher could be stretched when meeting individual needs. Happily there were no major technological failures during the observation period but on occasion headphones would appear not to work. Another area to emerge during practical work was the need for pupils to know how to handle the technology. The development of a 'skills set' was something of an afterthought for the teacher. For example, pupils needed to know how to 'delete', 'split', copy, repeat and move tracks. Others didn't know how to access editing screens.

In the last week of the project the pupils performed their raps. The subject of the rap – which was given and modelled – revolved around 'travelling', that is, going somewhere by modes of transport. This involved recording the pupils voices and the backing track 'live' back into GarageBand. However, the first class required more direction on 'how to perform'. There were a number of false starts, poor microphone technique, 'corpsing', and so on. This was addressed with the second observed class and some improvements occurred. However, the performance element was quite time consuming, taking up a whole lesson, and probably required more rehearsal time and detail. Nevertheless it was a 'sharing' of the pupils' work within a 'live' context and most pupils were happy to engage with the process. The musical outcomes of some of this work are discussed below. Suffice to say that, in general terms, the main elements of the project were achieved successfully by all the pupils.

2.5.1.3 – School 3: Observation and discussion

The teaching and learning focus for this scheme of work was to create a piece of music to go with a video clip. The supplied video was taken from 'The Grey Album', an amalgam of The Beatles' 'White Album and JayZ's ' The Black Album' (see appendix: DVD). The clip shows a fictitious 'live' performance by the Beatles being 'overtaken' by the rap music of JayZ. The pupils had to match the music to the on-screen actions and the change of musical styles. The teacher emphasized

the following elements: the beat must be 'synchronized' to the action, the sound clip 'Oh Yeah' must be placed where the main Beatle sings, a change of musical style should occur when JayZ appears, elements of humour should be added to the soundtrack. The teacher modelled the work using the interactive white board and engaged in some questioning techniques. The pupils received this part of the lesson in the central seating area of the classroom. Additional support was supplied on 'help' sheets and task reminders.

For the practical task the class initially sat in random groupings. Most of the pupils chose to work in pairs, but two pupils worked on their own and one group worked in a three. This latter trio was split up in week two when the teacher took more control of the groupings in response to one member of a trio exhibiting off-task behaviour. As in School 1, trio grouping proved problematic here. The revised pair grouping achieved better results in terms of observable learning engagement. As in the previous two schools there was no definition of roles. There was also no real whole class activity other than questioning. The teacher worked with the class by modelling expectations generally at the beginning of sessions. During less formal sections the teacher facilitated, monitored or sorted technical issues. One attractive element of these lessons was the use of pupils' work to articulate good features of work in progress and celebrate their success.

One feature of this scheme of work was the development of a more structured teaching and learning approach as the lessons unfolded. In the first week the teacher modelled the activity in broad general terms but left lots of areas of pupil choice 'open-ended'. The novelty of working in real time with a video clip initially engaged the pupils. However, the long practical session that followed left quite a few pupils adrift in terms of how to proceed with, or how to refine, their work. The teacher addressed this in the second and subsequent lessons. Here a number of 'golden rules' were modelled (e.g. 'synchronisation') along with the development of structural concepts ('binary'). With the

development of some shared criteria the pupils appeared to focus more. This was also aided by the re-jigging of the pupil groupings already mentioned. The pupils' interaction with the programme was good throughout and they easily grasped the real world context of putting music to a video. As in School 2 the technology seems suited to this sort of work. However, the musical focus was driven by the requirements of the video clip. In this multimedia context the music is an equal or subservient partner. The contextual cultural messages implicit in the video (e.g. 'white 60s rock' vs. 'black 90s rap') appeared to be somewhat lost on this Year 9 group.

As in the other schools there was no real 'teaching' of the technology. Hence, the pupils' desire to 'copy', 'split' and 'repeat' the loops was addressed in the informal setting of practical work. As before, a number of technical issues emerged. Malfunctioning headphones were a minor irritation. In one instance a headphone connector broke off inside the machine, so disabling it for the session. The video clip went missing on another computer and some pupils lost the 'Oh Yeah' loop that had been added by the teacher. When these issues arose, they demanded a lot of the teacher's time. However, for the most part the pupils appeared to find the programme easy and engaging. They were keen to share their work with others. For instance, a feature of the practical sessions was the call to 'listen to this'. As in the other two schools the overall sense was that pupils achieved, at various levels, the musical tasks that had been set by the teacher.

2.5.1.4 – Issues arising from observations

The observational evidence clearly suggests that GarageBand worked well in the classroom. Pupils easily engaged with, and conceptually grasped, the musical contexts provided by the technology. As Dillon found, this type of software appears to promote 'collaborative creative thinking' (Dillon, 2006b). When handling the loops the technology allowed all the pupils to respond musically,

irrespective of their current musical skills. Their engagement was, with one or two exceptions, directed and purposeful. As Gall and Breeze have found, the technological context motivated the pupils while offering them the opportunity to inhabit known musical contexts (Gall and Breeze, 2008) . Unlike earlier manifestations of this type of software, the musical interactions observed in School 2 suggested that GarageBand offered sufficient scope for the development and refinement of a range of musical responses that went beyond the loop.

Teaching and learning strategies in relation to the technology still need consideration. For example, the issues that arose in relation to ways of working - pairs, trios – and role were often overlooked or undefined. However, they are important when considering equal access to musical decision-making. Higgins has suggested that teachers may have to 'teach' pupils how to interact when working collaboratively on the computer (Higgins, 2003). Resourcing also impacts on ways of working and has consequences for teacher's time (Sefton-Green, 1999). While there were few major breakdowns relating to the technology, there were issues in School 1 where resourcing was uneven. The uncluttered and logical layout in School 2 appeared to support learning more effectively. The skills set required to manipulate the technology also needs further consideration both in terms of how it is taught and what is required (Buckingham, 2003).

The structured musical contexts provided here suggest that pupils respond well to clear guidance linked to musical coherence. Too much freedom may leave the pupils floundering and teachers need to consider what range of choices they devise for their pupils. On the other hand, when musical choices are driven by other considerations (e.g. music to video) the nature of the musical learning may be called into question. As Gall and Breeze found: 'appropriate task design, balancing constraint and freedom... and structuring of the activity' (Gall and Breeze, 2008: 38) are necessary elements in developing the appropriate learning environment. While the musical contexts provided in the three schools

were valid, some appeared to be more appropriate to the technology than others. The real world context of the technology needs to be taken into account if it is not to replicate traditional musical ideologies that see classical music as having the 'greatest value' (Green, 2003). As we saw in School 2, where performance elements are introduced, the issue of instrumental and presentational skill needs to be considered.

2.5.2 – Interviews: positive response to GarageBand in the Classroom

The positive response toward GarageBand during interview was quite marked and can be shown by quantifiable analysis of initial responses. For example, when the pupils were asked 'What don't you like about GarageBand?' a large percentage of respondents maintained 'nothing' was wrong with the programme.

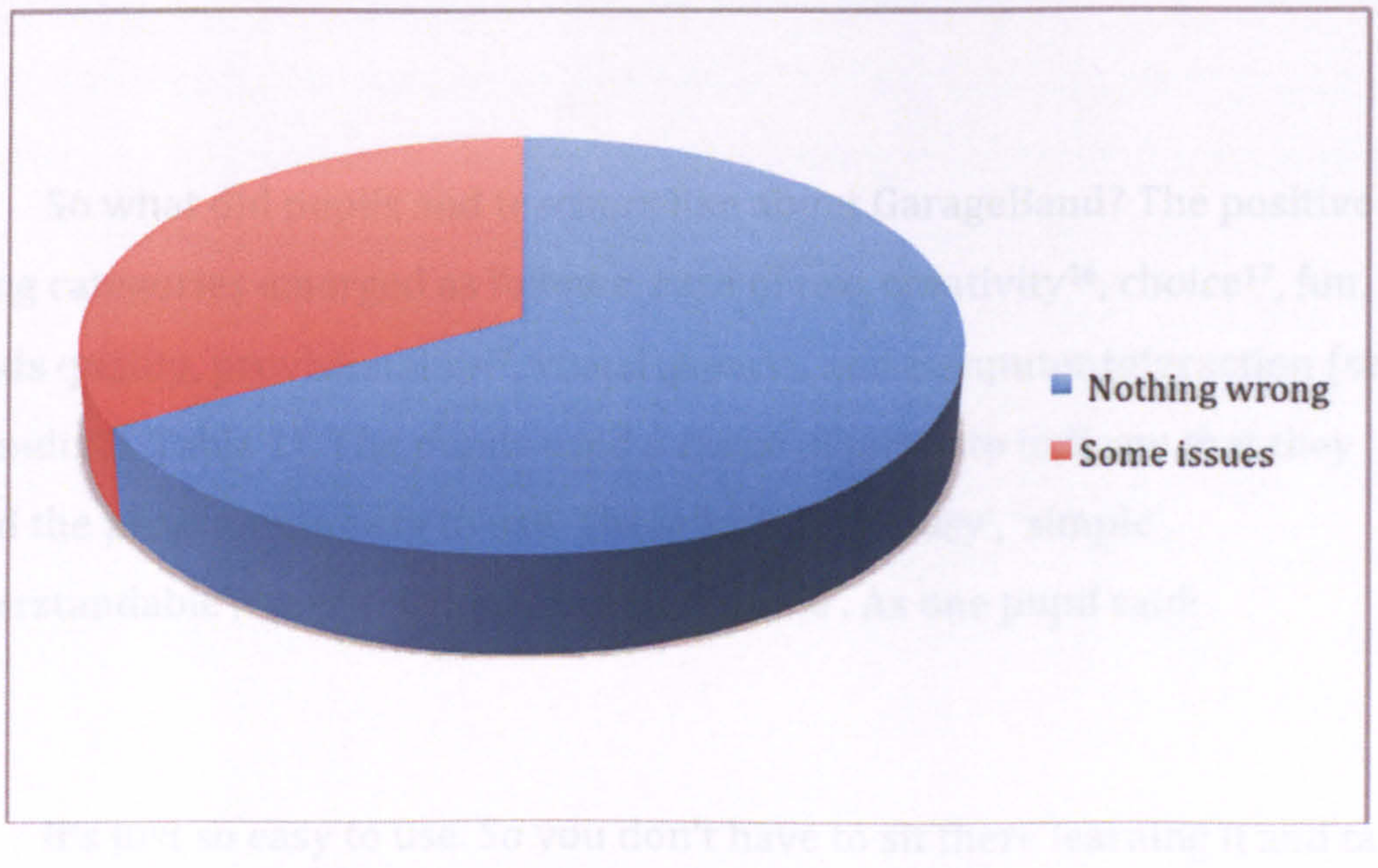

Fig. 17: Response to 'What don't you like about GarageBand?'

Similarly, an analysis of coded positive to coded negative response demonstrates that there were one hundred and thirty-six positive codings to thirty-four negative codings.

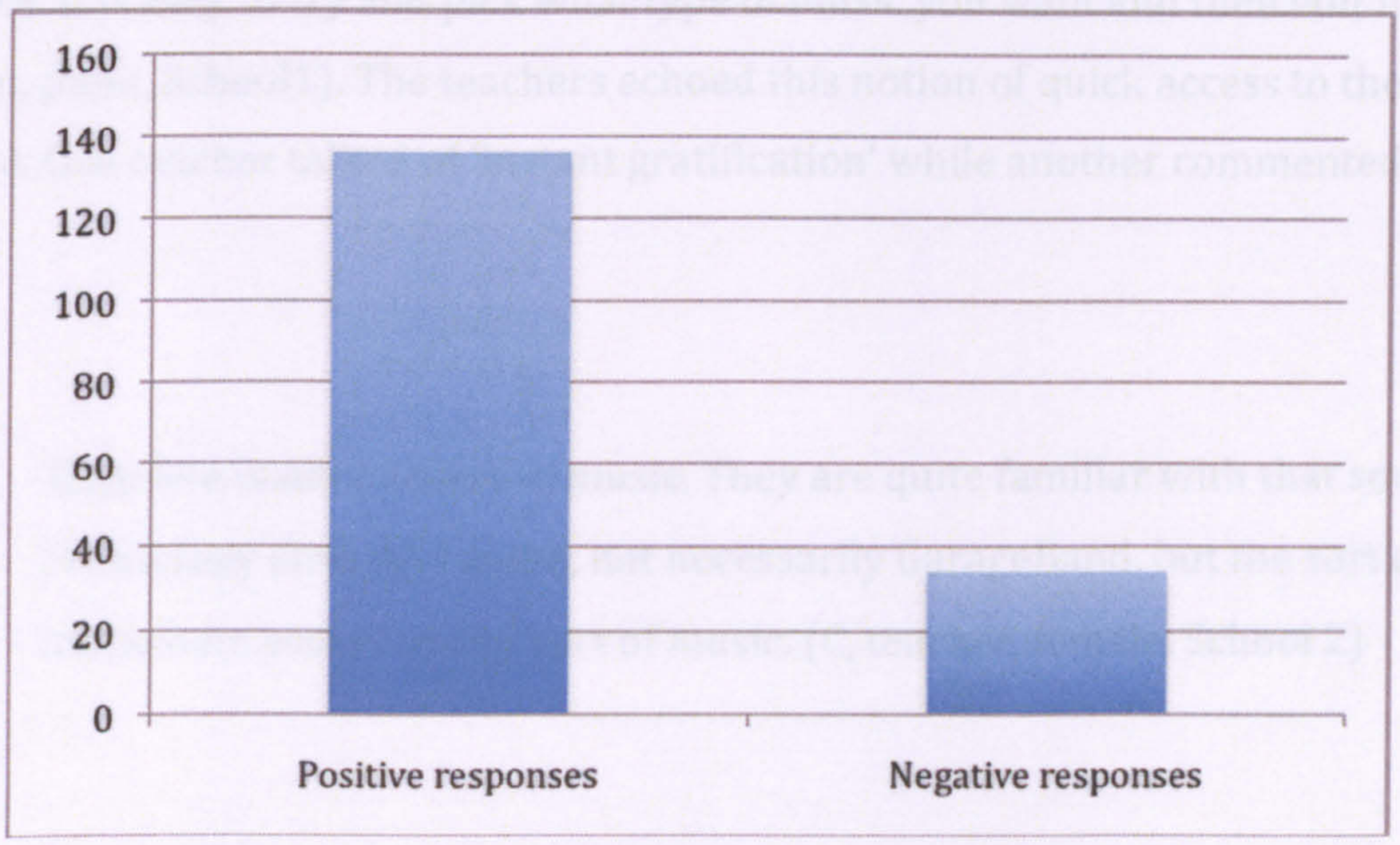

Fig.18: Positive and negative responses to GarageBand

So what did pupils and teachers like about GarageBand? The positive coding categories emerged as follows: ease of use, creativity[16], choice[17], fun, sounds quality, provisionality[18], visual aspects, and computer interaction (see Appendix 2, Table 1). The pupils used a range of terms to indicate that they found the programme easy to use. These included: 'easy', 'simple', 'understandable', 'user-friendly', and 'accessible'. As one pupil said:

> It's just so easy to use. So you don't have to sit there learning it and taking ages to do it. You just go through it really quickly. (Emma, pupil, School 2)

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[16] See Chapter 4
[17] See Chapter 3
[18] The term 'provisionality' is used here to denote that the music can undergo further change or revision.

So the ease of use was related to the time that it took to grasp the main elements of the programme. One pupil said she learnt the programme in 'like a week' which led in turn to pupils getting on with musical decision making as in: 'It's simple. It is easy to try and pick what type of music you want and then edit it' (Sami, pupil, School1). The teachers echoed this notion of quick access to the music. One teacher talked of 'instant gratification' while another commented that:

> They like instant access to music. They are quite familiar with that sort of technology already. I mean, not necessarily GarageBand, but the sort of immediate access to any sort of music. (C, teacher, female, School 2)

This acknowledgement of the pupils' technologically mediated musical lives chimes with the literature on digital childhoods (Buckingham, 2005). Another teacher linked this instant access to the quality of the resulting sound as in: 'It's accessible and very quickly they can put something together that sounds really good' (W, beginning teacher, male, School 1). Moreover, some of the understanding of the programme was transparent and intuitive. As one teacher respondent stated: 'Even if you haven't totally been told all the information that you need, it's quite easy to work out all you need for yourself' (Y, teacher, male, School 3). This contrasts with other expressions of music software drawn from the professional world of music: As one teacher respondent stated:

> It's immediate, it's a very simple interface. There aren't a lot of things, like Logic[19], they can mess the program up and delete things. With this it seems to be very well thought out and very user friendly. (N, teacher, male, School 1)

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[19] 'Logic Pro: a professional digital audio workstation (DAW) software package

This welter of praise for GarageBand's 'ease of use' does not mean that the participants' experience was totally trouble free, but as we shall see below, the issues were often related to specific resourcing shortcomings or the framing of the learning. What is clear is that with matching, functioning and up to date resources, and clear framing of the learning, the software is easily comprehensible to pupils and 'fits' with their own experience of the digital world. They quickly get to make music decisions.

The pupils also appeared to have fun. This was often linked to the programme's ease of use as in: 'Yes, it's easy to use and fun to play with'. Here the 'play' might refer to game elements of exploration, trial and error, or the humour implied by making or merging choices[20]. It also has links to 'playing music' and 'playing back' music. This was hinted at in the pupil response that stated: 'Yeh, it is probably just that it is fun and I can make music myself'. Observational evidence appears to confirm that pupils enjoyed the interaction with GarageBand. The role of 'fun' in learning is important and is often at the heart of effective practice. However, as discussed in the next chapter, certain aspects of musical learning can engender fear and vulnerability in pupils.

Pupils and teachers were impressed by the quality and range of the sounds offered by GarageBand. The fact that the sounds were pre-recorded slices of real audio (i.e. digital samples) lent them a degree of aptness and authenticity. As one pupil stated: 'Yeah, the sounds were really good. They go with the sort [of thing] that we were meant to be doing....' (Devante, pupil, School 3). Teachers also appreciated the 'good quality sounds' and recognised that the pupils 'particularly like the samples'. Another teacher picked up on the fact that quality linked to ease of use was an attractive feature stating that:

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[20] Note that in school 3 part of the task was to add 'humour'.

... all the loops sound very professional, because they're kind of all nicely arranged and everything, it's kind of ...you can get some quite nice sounding results very quickly and I think that appeals to a lot of kids (W, beginning teacher, male, School 1)

The pupils easily recognised the nature and potential of the loops, what one pupil referred to as the 'ready-made sounds'. Some pupils saw these as the 'right tune' or 'different tunes'. Others talked of instruments as in: 'you get to, like, hear all different instruments and hear what they sound like'. Evaluating the sounds was supported by their presentation as loops. For example: ' you can just loop it and hear what it's like when you are looking for stuff'. The fact that GarageBand 'sounds' so good is important. Much of the dissonance that pupils experience in relation to school music might be a result of the way that school music 'sounds'. In Chapter 3 one pupil refers to the sounds created in previous music lessons as 'rubbish'. Often school music is articulated through cheap resources that are limited in range and quality. The 'sound' of a small school glockenspiel, a sub £100.00 keyboard or descant recorder cannot equate to the sound of music that pupils hear on their mp3 players, mobile phones or televisions. Even where good instruments are available, the professionalism required to play them to realistic musical levels is often absent. This does not appear to be the case in lessons where GarageBand produces the sound. In fact a degree of musical authenticity is achieved in the classroom which chimes with the pupils' musical world outside school. For example, one pupil said:

...it helps us, like, writing the proper music ...its what ....the professionals do, like, what they do and it's a privilege to have that (Miriam, pupil, School 3)

A feature of all technology is its provisionality. Whether it is a word processor or a programme such as GarageBand, there are generally sets of options that allow you to edit and refine the work. How easy or difficult it is to access these options, along with the range and refinement of the editing tools, is important. If the authoring skills set is difficult to access or too demanding then frustration will result. The process becomes something to do with technology as opposed to something to do with music. A number of participants alluded to the provisionality inherent in GarageBand as a positive. For example:

> 'you can play it on to the computer and then cut it and edit it' (Eliesha, pupil, School 2)
>
> 'it allows you to experiment and then erase it and try again' (Lottie, pupil, School 2)
>
> 'you go wrong you can go on it and take that out '(Peter, pupil, School 1)

Much of this was linked to 'getting it better' or correcting things that 'go wrong'. As one teacher noted: 'It's kind of one of the best things about it being a computer program. You can undo things. They can go back and change things.' (C, teacher, female, School 2) There was also the ability to keep options open while in the process of experimenting, as in: 'you can give your different opinions on it and say what you like about it and you don't have to add everything, you just add little bits on it...' (Polly, pupil, School 2). However, if these pupils found provisionality a plus, other pupils found certain aspects of changing and correcting their music more difficult. These aspects are discussed below. The larger issue relating to GarageBand's range of tools and the teachers' role in communicating these to the pupils is also discussed in more detail.

There were a number of other areas that respondents found to be 'good' aspects of GarageBand. For two of the teachers the visual affordances of the

technology were important. One said that 'seeing the music' on screen was an attraction. This is discussed in more detail in relation to music notation in Chapter 3. The other teacher had linked a moving image to the musical task set for the pupils. Here he felt: 'that fusing the audio side of it with the video worked really well'. The same teacher felt that the pupils were attracted to the technology itself stating that they liked: 'these brand new shiny iMac computers' that they were 'really drawn to'. For the pupils the fact that it was 'very interactive' was a positive. Interestingly, two pupils saw the interactive nature of the programme as helping them towards a deeper engagement with the music. For example:

> 'it helps you to use your brain more so that you will be able to, you know... makes you interact more' (Miriam, pupil, School 3)

> It helps you like...it... I can't explain it... that teach me things. It helps you (Sakhile, pupil, School 3)

As has been shown, the views of most respondents were surprisingly positive. Pupils and teachers shared the view that 'it worked'. With past incarnations of music technology, the teacher could spend 'huge amounts of time just dealing with technical problems'. But 'the thing with GarageBand is that they have pared it right down.... It's very simple'. This in turn led to more learning. As one teacher said: 'It's amazing when things work, it is amazing how much learning you get' (N, male, teacher, School 1). For the pupils, as we shall see in a later chapter, it was the easy functionality of the technology that allowed them to ultimately make their own music: As one pupil explained:

> I like GarageBand because you can do, like, so much stuff with it. Mmm. Like you can record stuff, you can play stuff, like you can use keyboard

and play and then overwrite it and put different sounds and stuff into make your own music. (Eleanor, pupil, School 2)

2.5.3 – Interviews: negative response to GarageBand in the classroom

There are many apocryphal stories about computers not working. For example, on YouTube you can see a range of 'funny' videos showing this battle between humanity and the computer. One of these, entitled 'computer attacks man' (http://www.youtube.com/watch?v=b-Mdzjt1sXs) shows an office worker who is unable to make his computer work. He hits the computer and thumps the desk in frustration. In response the computer keyboard jumps off the desk and hits him a glancing blow. Infuriated, he grabs the keyboard and smashes the whole computer to the ground. The computer trembles with threatening intent before flying off the floor and knocking the man out cold.

However, as previously stated, the conflicts between the computer running GarageBand and the user were relatively few (see Appendix 3, Table 2). Nevertheless there were a small number of frustrations voiced. One of these related to what might be called technological intrusion. For example, problems arose when the technology and its peripherals (e.g. headphones) did not work. A teacher respondent was conscious of the potential difficulties here, stating that a major issue might be:

... when things didn't work, I suppose, that's one thing that would be frustrating. And I know that it's generally pretty good in there but when it's not they (the pupils) would find that hard. (C, teacher, female, School 2)

In some instances there were barriers to accessing the musical potential of the technology. The piano style keyboard attached to the computer posed certain difficulties here. One teacher, talking more generally about computer based music making, stated:

> What gets in the way is their [the pupils] lack of keyboard skills and knowledge... so there's a barrier between their musical skills and the computer. (N, male, teacher, School 1)

While Schools 1 and 3 did not ask the pupils to manipulate the piano keyboard, School 2 did require the pupils to use the keyboard to play in a short drum track. In this context the pupils' lack of keyboard performance skills became apparent[21]. They had difficultly playing in time with the computer. Consequently a number of pupils played the music in incorrectly. This led to attempts to amend their work by utilising the programme's editing features. This in turn required an expanded set of technological skills. While GarageBand can correct the timing of notes the pupils found the process and visual interface problematic. As one pupil stated: 'it gets a bit fiddly.... you're doing the cymbal [and] its really close together, and you can't stretch them' (Lottie, pupil, School 2). This editing slowed up proceedings and took pupils away from musical matters.

Teaching the requisite editing skills also took up the teacher's time. As previously stated, this is an area of working with technology that needs consideration. Ensuring that everything is working and responding to unanticipated problems and malfunctions can erode the teacher's time to teach. As one teacher respondent stated:

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[21] Issues relating to performance skills are discussed in greater detail in Chapter 3.

> One of the problems was that it always took me, personally, an age to make sure [that] every keyboard was working [and] every computer had two headphones. ...there's a lot of preparation goes in to using it successfully (Y, teacher male, School 3)

The time required to keep everything 'working' is a major issue for a technologically mediated music classroom. Teachers need support here. As the recent Ofsted report pointed out: 'where provision for music technology was strong, it was not unusual to find that a specialist had been appointed' (Ofsted, 2009: 35).

A number of technological issues related to frustrations arising from file management – 'like I forget to save it' – and keyboard and mouse control – 'you have to press shift... the buttons are a bit hard'. The issue of deleting or losing work inadvertently – common to all computer users – was also mentioned. A more important issue was the problem of storing and accessing the musical loops. These take up a large area of hard disc space and access can be problematic when remote servers are involved. This happened at the beginning of the project in School 1 and resulted in some loops only being available on certain machines. As one pupil bemoaned:

> ...a few weeks ago...they wanted to put some new stuff on GarageBand but it hadn't arrived yet. And it arrived on one computer. So I thought it was a bit unfair because they (the other pupils) had more stuff. (Peter, pupil, School 1)

Problems also arose during the project because Apple had changed the file format used for loops. In School 1, the format had been the widely used 'audio interchange file format' (aiff). However, in Schools 2 and 3 Apple had

changed to a proprietary format called 'core audio format' (caf). This resulted in early files becoming unplayable in later versions of the software. As already discussed above, this constant updating and development of hardware and software is a major issue for schools and practitioners.

One area of positive response discussed in Chapter 3 is the 'choice' offered by GarageBand. However, the very range of that choice was seen by some to be problematic. For example, some pupils spoke of 'search exhaustion' as in:

> When you have the sounds on there you have to sit there listening through all of them just to see what one you can find. And it's not that obvious. Like if you want to find something it's not obvious. You have to look through all of them to find the one you want and it takes a while to do that. (Emma, pupil, School 2)

There are a number of issues here. One relates to the organisation and labelling of the sounds. Another is the capacity of the software to 'search' for the sounds. A third is the learning context and constraints that has been devised for the pupils. Most of the teachers in this research attempted to constrain choice through the task. Without these constraining contexts pupils may have got lost in fruitless exploration - what one teacher alluded to as 'well, you could spend seven hours looking'. However, even with such constraints in place some pupils could not: 'find one [loop] that fits with your piece'. While the programme offers a number of ways to search for loops and remember choices, the teachers did not 'teach' or allude to these features.

Some other minor issues arose in relation to the visual presentation of the musical elements on the screen. For example, one pupil found it: 'a bit of a hard lay-out'. This might be to do with appearance and disappearance of the browser and editing windows. As one pupil described this as: 'if you touch one bit it kinda

goes, like it messes up. It's irritating'. While the software is generally easy to comprehend there still remain issues about the way screens can change according to open/closed windows, magnification and number and length of tracks.

2.5.4 – Interviews: summary

We can see from the interview analysis that pupils and teachers generally responded positively to GarageBand. The software offers a supportive environment which provides structured content that the learner can explore (Scrimshaw, 2001). This improves on previous music packages, such as Cubase, which were open-ended 'blank sheets' requiring conceptual understanding and performing skill. GarageBand is 'easy to use' and comprehensible and there appears to be no indication that the software excludes in terms of gender. However, teachers do need to consider the ways in which they will support all their pupils in the development of software related skills sets (Buckingham, 2003) and how they might alleviate the issues relating to file management and organisation of sounds. The fact that GarageBand is 'fun' is positive, particularly with regard to pupil motivation and engagement. It also offers a degree of authenticity that chimes with the pupils' digital and musical worlds (Buckingham, 2005; Gall and Breeze, 2008). The new technology can offer substantial musical choice and this, along with provisionality, can be seen as one of the major affordances of technology (Loveless, 2007). However, teachers need to consider how they will support pupils in their choices. In doing this they must balance the freedoms offered by the wealth of musical material available with the ennui that might occur in directionless and time consuming auditioning. As they develop and expand their approaches to the software, as appeared to be happening in School 2, they will need to be aware that interaction involving keyboards might impede pupils' musical engagement with the programme. How they develop their thinking in relation to the new technology will depend on the relevance of the resources available in their classrooms (Ofsted, 2009) and their

own professional development (Cuban, 2001). They will also need to consider their role as a teacher when providing musical contexts and models for the pupils' creative explorations.

2.6 – Conclusion

This chapter has suggested that previous manifestations of music software in the curriculum have proved problematic(Ofsted, 2004; Ofsted, 2009). It has also pointed to some difficulties surrounding the introduction of technology into schools in general (Cuban, 2001; Selwyn, 2002). Some of these perceived failures have been to do with culturally located debates that polarize views in relation to technology's potential or lack of potential (Buckingham, 2003). There have also been tensions between technology and music which create anxiety in relation to human agency and musical expression (Taylor, 2001). Its relationship to commercial and global markets also needs to be borne in mind when it is used in educational settings (Craft, 2005). However, in doing so we need to recognize that technology mediates the social and cultural worlds of young people in a plethora of profound ways (Buckingham, 2005).

Each new manifestation of technology needs to be considered on its educational merits. The new music technology, as expressed in GarageBand software, provides an emerging area of musical engagement which turns the listener into a creator (Katz, 2004; Crow, 2006). It also addresses a number of areas that made previous music software distant, inaccessible or difficult for pupils and teachers (Armstrong, 2005; Ofsted, 2009). However, I will argue that its success in the music curriculum depends on reconfiguring our view of what it is to be musical (Théberge, 1997).

This chapter has shown that the new technology can be effectively incorporated into the Key Stage 3 curriculum. It appears to motivate and engage pupils through its conceptually accessible interface. This is not to overlook the fact that issues exist in relation to technological intrusion, ways of working,

learning design and the role of the teacher. This latter has implications for teacher education and professional development. We also have to consider how the approaches discussed in this chapter meet the demands of the National Curriculum. In a similar vein we need to interrogate in what ways the new technology might promote creativity – whatever that might be - and how we might value the processes and outcomes of technologically mediated learning. These areas are dealt with in subsequent chapters.

Chapter 3: The new technology and the Key Stage 3 music lesson

3.1 – Introduction

While the main focus of this research is the creative affordances of the new technology, it is important to place the technology within the overall set of assumptions and values that underpin the current Key Stage 3 music curriculum. Hence the research questions addressed in this chapter are:

> What musical actions do pupils engage in when making use of digital technology? How does the technology shape the pupils' interaction and response? What is the nature of the musical processes and outcomes? How do they relate to the current assumptions regarding musicality and learning in the Key Stage 3 classroom? What musical actions are missing when pupils engage with the technology? Does the technology support and develop musicality?
>
> In relation to the above: How do pupils and teachers conceive of the musical interactions that take place in a technologically mediated learning environment?

The set of beliefs that lie embedded in the music curriculum will affect how pupils and teachers view and value the musical processes, the learning and the outcomes offered by such technology. Hence a number of areas probed during the research related to the music curriculum as a whole. For example, I asked pupils about their musical involvement to date, how the GarageBand lessons compared with other types of music lesson and in what ways they thought they were being musically creative when using GarageBand. In addition, I asked

teachers and their pupils what 'learning' they thought may, or may not, have occurred during the various projects. Currently the music curriculum frames learning in three broad areas: performing, composing and listening, to which is added the ability to evaluate and review work (QCA, 2007). The work involving GarageBand may be seen to be located most aptly in 'composing' and this is dealt with in Chapter 4. However, it is the intention of this chapter to explore how the technology, as articulated during the research, sits in relation to other key areas of the current curriculum which define and frame musicality. These areas are musical performance, music notation, listening and learning.

In doing so I intend to interrogate how the belief in 'live' musical performance lies at the core of the current music curriculum. Activities that fall into this frame are equated with musicality and musical learning, hence the emphasis on playing instruments and singing in curricular and extra curricular contexts. The legislative documentation (ibid.), the stakeholders (NAME, 2010) and lobbyists (YouthMusic, 2006; MusicManifesto, 2010) in music education still adhere to and promote this idea. Even the new initiatives (D'Amore, 2009), while providing a welcome change of focus away from teacher-led, formal approaches influenced by the Western classical tradition, still emphasise musical performance as a key element. However, there are many problems with musical performance, the most obvious one being that most young people do not, for a variety of cultural and socio/economic reasons, play a musical instrument. The research outlined here emphasised a different approach to music making. It provided pupils with ready-made musical materials, freeing them from any need to perform or create through performing. It asked them to engage in alternative musical ways. The research interrogates what teachers and pupils felt about the absence of musical performance in such musical engagements.

Another area related to performance, reading music notation, still holds great importance in the current curriculum. However, even fewer young people can read standard music notation than can play instruments. Yet, in the debates

surrounding music education there are loud calls for music notation to be taught and assessed. This is in spite of the fact that the links between deciphering the code of music notation and being musically literate are tenuous (Green, 2001). Moreover, music notation conveys more than just the instructions on how to play the notes. It also holds a set of cultural beliefs and values which colour its application and use. The new technology provides a different sort of visual information in relation to sound. The research probes how pupils use this information to augment and apply their musical understanding.

Listening to music, linked to appraising, is another important area of the curriculum. The triumvirate of composing, performing and listening, adopted by the initial National Curriculum (DFE, 2000) as an organising principle in musical learning, has historical precedents which place the listener in a passive relationship to music. However, the view of the listener has changed over the years. In particular the rise of technology has begun to offer the listener more autonomy in the way she chooses and uses music. The research interrogates how the new technology engages pupils in active listening contexts. In these contexts the listener, or consumer of sounds, becomes the composer, or producer of sounds.

The last section of the chapter looks in detail at what the pupils and teachers thought they might be learning in the musical contexts offered by the new technology. An initial exploration into the problematic nature of musical learning is followed by an analysis of key learning areas perceived by respondents. Learning is also linked to assessment and value and these will be dealt with in Chapter 5. Learning to be creative and to compose will feature mainly in Chapter 4.

The conclusion to this chapter will acknowledge that certain key processes and their associated learning – as outlined in the National Curriculum

– are missing from pupils' musical interactions with the new technology. However, it will also suggest that the new technology offers alternative ways for young people to demonstrate their musicality. In the light of this the chapter will argue that the Key Stage 3 curriculum needs to broaden its perception of what it is to be musical. In doing so the music curriculum might hopefully widen access for that large percentage of pupils who are currently excluded from being musical in the school context.

3.2 – Advocacy for musical performance in the curriculum

'I'm really rubbish at playing musical instruments. But I'm quite good at music.'

(Emma, pupil, School 2)

For most music teachers, 'performance' lies at the heart of their concept of a music education. This is not surprising. The identity of music teachers is still predominately shaped by performance traditions. For example, the profile of the PGCE students involved in the research[22] accorded with other recent studies in this area (Hargreaves et al., 2003). The group were in their early to mid 20s, had a first degree in music, and most had taken public exams in music (GCSE, A level, Associated Board) prior to university study. The students' undergraduate experience had mainly focused on performance within the European tradition. While this group had a degree of variation in the type of music they performed, they nevertheless saw playing music as the norm (Crow, 2008).

Music teachers are also directed by the new National Curriculum to promote musical performance (QCA, 2007). It stresses that one of the 'key

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[22] See Chapter 4

processes' of the music curriculum – that is, one of the 'essential skills and processes that pupils need to learn' – should include the ability to:

> practise, rehearse and perform with awareness of different parts, the roles and contributions of different members of the group, the audience and venue (QCA, 2007: 182)

Hence pupils 'should be able to ... sing in solo or group contexts... perform with control of instrument – specific techniques' and 'develop musical ideas when performing'(ibid.). As Green points out: 'music education participates in the construction and perpetuation of ideologies about musical value'(Green, 2003: 263). Green may have been referring to the 'value' attached to western 'classical music' in the cited chapter. It is nevertheless the case that the National Curriculum document is setting up musical performance as one of its 'achievement orientations'(ibid.264). This is also the case at GCSE and 'A' where 'performing' is a core component a the music exam that accrues 30% of the overall marks[23](EdExcel, 2009).

Ofsted also sees performance as a key area of good practice. A recent report on music in schools noted that typically, in 'good and outstanding lessons.... practical music-making activity was at the heart of the work'(Ofsted, 2009: 26). While warning against a mechanistic pursuit of 'technical mastery' and 'the increasing difficulty of the task' they nevertheless saw musical performance as a key area as long as it occurred 'as a living, personal, social and cultural experience'(ibid.47).

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[23] There is an exception to this in the 'A' level Music Technology exam.

There is also much support for musical performance in academic circles. Savage claims that musical performance is 'the best way to experience music's symbolic power'(Savage, 2007: 139) and Elliot maintains that 'performing takes learners to the heart of music practice'(Elliott, 1995: 173). Reimer believes that musical performance is a type of intelligence in which, 'thinking, feeling and acting are uniquely conjoined in the process of bringing music ideas to sonic fruition'(Reimer, 1994: 20). Interestingly, Reimer's and Savage's emphasis on musical performance is presented as something of a defence. They fear that musical performance is under threat from the growth of technology. However, the history of music education since the 1970s suggests otherwise. From the child-centred approaches of the 1970s (Paynter and Aston, 1970; Schafer, 1976) through to alternative traditions of the 1980s (Vulliamy and Lee, 1982) and on to the inception of the National Curriculum in 1988, performing has been at the heart of the curriculum. The fact that pupils are actively engaged when playing musical instruments is also supported by a number of currently accepted pedagogical standpoints (Dewey, 1916; Vygotsky, 1982) that promote active and meaningful learning. The recent advent of informal approaches (Green, 2008) has introduced many new elements into the process of musical learning in schools. It involves the learners choosing the musical material, copying the music by ear, working in friendship groups, and, perhaps most controversially, working without teacher led instruction. However, skills acquisition related to musical performance is still a key requirement, albeit involving a range of rock related instrumentation and practised in an informal setting.

Support for performing has also come from the government. In 2007 they announced 'a £332m investment in choirs, orchestras, performances, new instruments and free music lessons' (MusicManifesto, 2007). This was partly in response to lobbying by the influential Music Manifesto group (MusicManifesto, 2010) – initially set up by the government in 2004 but now run by a voluntary, independent group – whose aim was 'that all children and young people have access to high quality music education'. What they mean by a high quality music education might be suggested by the list of supporting signatories at the time of

their launch. These were drawn from the commercial world of music and included major symphony orchestras, opera companies, concert venues, music conservatoires, broadcasters, record companies and instrument manufacturers. While the growing list of current signatories under the organizational umbrella is now much broader, the Music Manifesto's main emphasis is on live performance within a traditionalist musical culture. Perhaps it is no surprise that the current chair of the group (2010) is the managing director of classical music radio station, Classic FM. The government money has largely been channeled through instrumental music services. These services have continued to provide pupils with individual and small group music instrumental tuition, in an optional parallel curriculum, for those who can afford to pay. As Ofsted points out:

> Music services in local authorities contributed significantly to broadening provision, especially through providing instrumental tuition and providing opportunities for pupils to perform in regional ensembles and at national and international musical events (Ofsted, 2009: 7).

While this is a further endorsement of the value placed on musical performance, it rings rather hollow in the light of recent statistics into musical performance activities among young people (YouthMusic, 2006). These statistics suggests that only 10% of the school population in the state sector are 'accessing music-making activities (primarily instrumental tuition) via Music Services'. Going beyond this, the report suggests that a further 29% of 7-19 year olds are making some sort of music outside of this provision. Of these 17% make music informally with no adult intervention. The reasons for this are not hard to find. To play a musical instrument costs money. Hence some of the reports' findings suggest broad discrepancies in terms of social class, For example:

- Children from the most wealthy families are twice as likely to be playing an instrument than those from the poorest communities.

- The highest proportion (**34%**) of children and young people who would like to be able to do something musical but have never had the chance are to be found in those poorest communities.
- The largest disparity is in instrumental playing between the highest and lowest social grades – (**33%** as opposed to **17%**).
- Of those who have never done anything musical but who want to, **34%** were from the lower social grades, compared with **11%** in the higher social grades. (ibid.)

As these statistics suggest, the majority of pupils come to school without instrumental skills. Is it therefore possible to learn to play a musical instrument in the Key Stage 3 curriculum? Musical performance within the curriculum context is affected by a number of factors. Class size in music lessons at Key Stage 3 is large. In the schools I observed, class sizes ranged from 22 to 30+. Lessons are short and infrequent, usually occurring for approximately one hour a week. Space is limited, with work usually confined to one classroom with little opportunity to break out into other spaces. Resourcing is partial and patchy, with one school only offering keyboards, another recorders, yet another offering a range of percussion instruments. These are difficult contexts for teachers to manage. In particular, teaching pupils to play a musical instrument in an overcrowded and under resourced classroom is problematic.

Hence there is a conundrum at the heart of the music curriculum. A range of authorities, lobbyists, commentators, and practitioners see musical performance as the key to musical learning. Not only is it how we learn about music, it defines our relationship to music and articulates our creative response. However, for those pupils who want to engage with music, but who cannot or do not want to play a musical instrument, there are a number of important issues that educationalists need to address. The most important area is the need to recognise and validate musical interactions that fall outside the current set of

perceptions which confer musicality. There are a number of indicators that this is happening at exam level (EdExcel, 2009) and in recent research (Finney and Burnard, 2007). However, it is still predominantly the case that teachers cling to traditional forms of musical interaction which can, and often do, alienate their pupils.

3.3 – The new technology and musical performance

This section reports back upon a set of questions asked in one to one interviews with pupils and teachers in the three schools and the panel of teachers who listened to the pupils' work (see Appendix 1c and 1d). The questions sought to provide some contextual detail in relation to my enquiry into the main advantages and disadvantages of GarageBand. Hence the following analysis and discussion relate to the questions – to the pupils: 'Do you/have you played a musical instrument?' 'Would you call yourself a musician?' 'How does this type of lesson compare with other types of music lesson?' – and to the teachers: 'What do you think pupils are not learning when they use GarageBand?'

3.3.1 – Playing an instrument and being a musician

Figure 19 shows that the majority of the pupils interviewed did not currently play a musical instrument outside of the classroom.

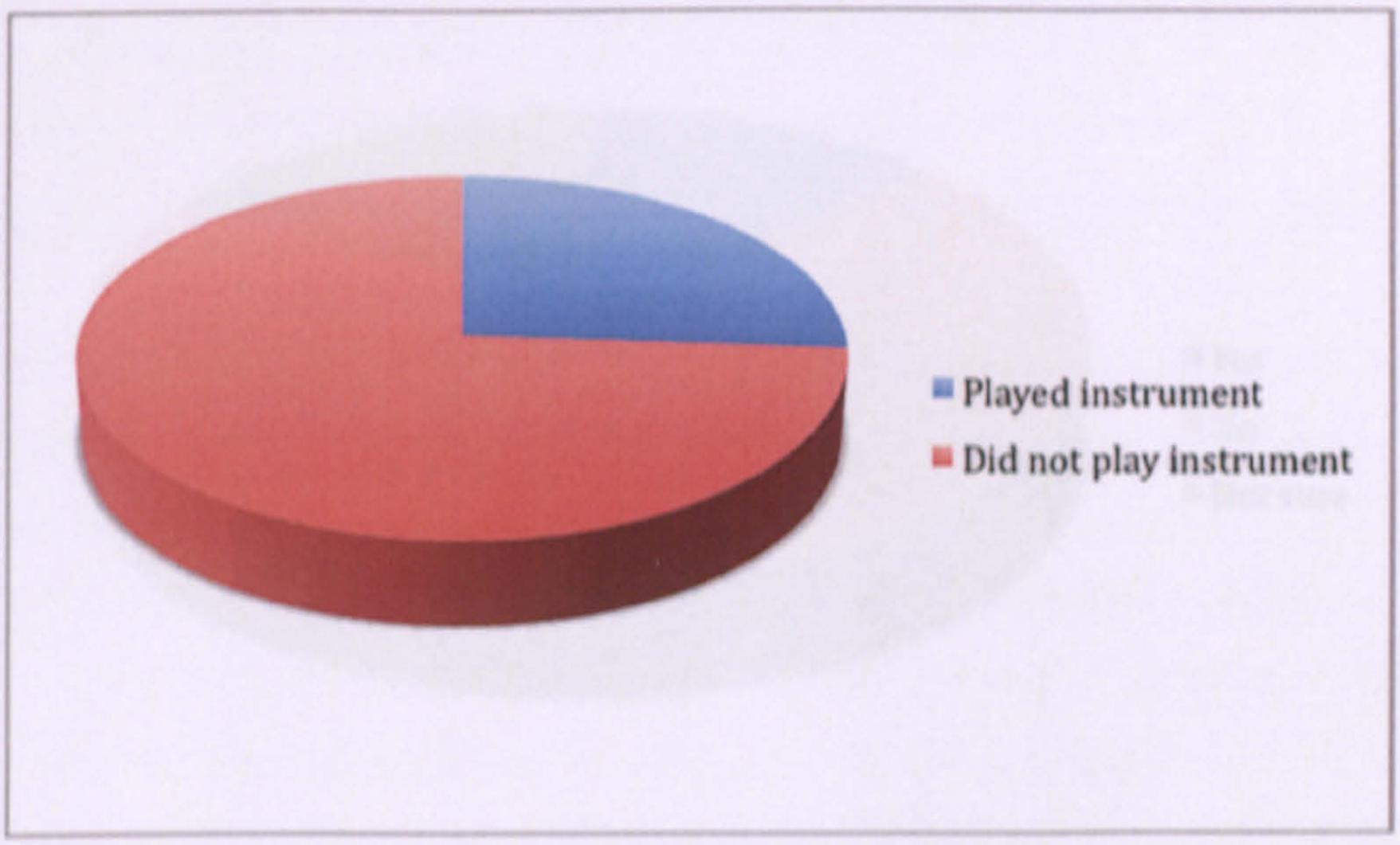

Fig. 19: Playing a musical instrument: comparison

In the non-instrumental group, five pupils said they had never played anything. Of those remaining, 13 had received lessons in the past but had 'given up' and 13 said they had played the recorder and tuned percussion in classroom contexts. The highest achieving school in the group had most instrumentalists while the lowest achieving school had none. Of those who were currently learning to play instruments the range included piano, clarinet, oboe, drums and violin. A number of these pupils had just started to play. Only two pupils mentioned grade exam levels and the highest grade reported was 5. There is nothing particularly unusual about these statistics but it is worth noting the disparity in uptake between schools.

Perhaps more surprising was the response to the question 'Would you call yourself a musician?' Figure 20 shows that the majority of pupils interviewed felt they were not a musician.

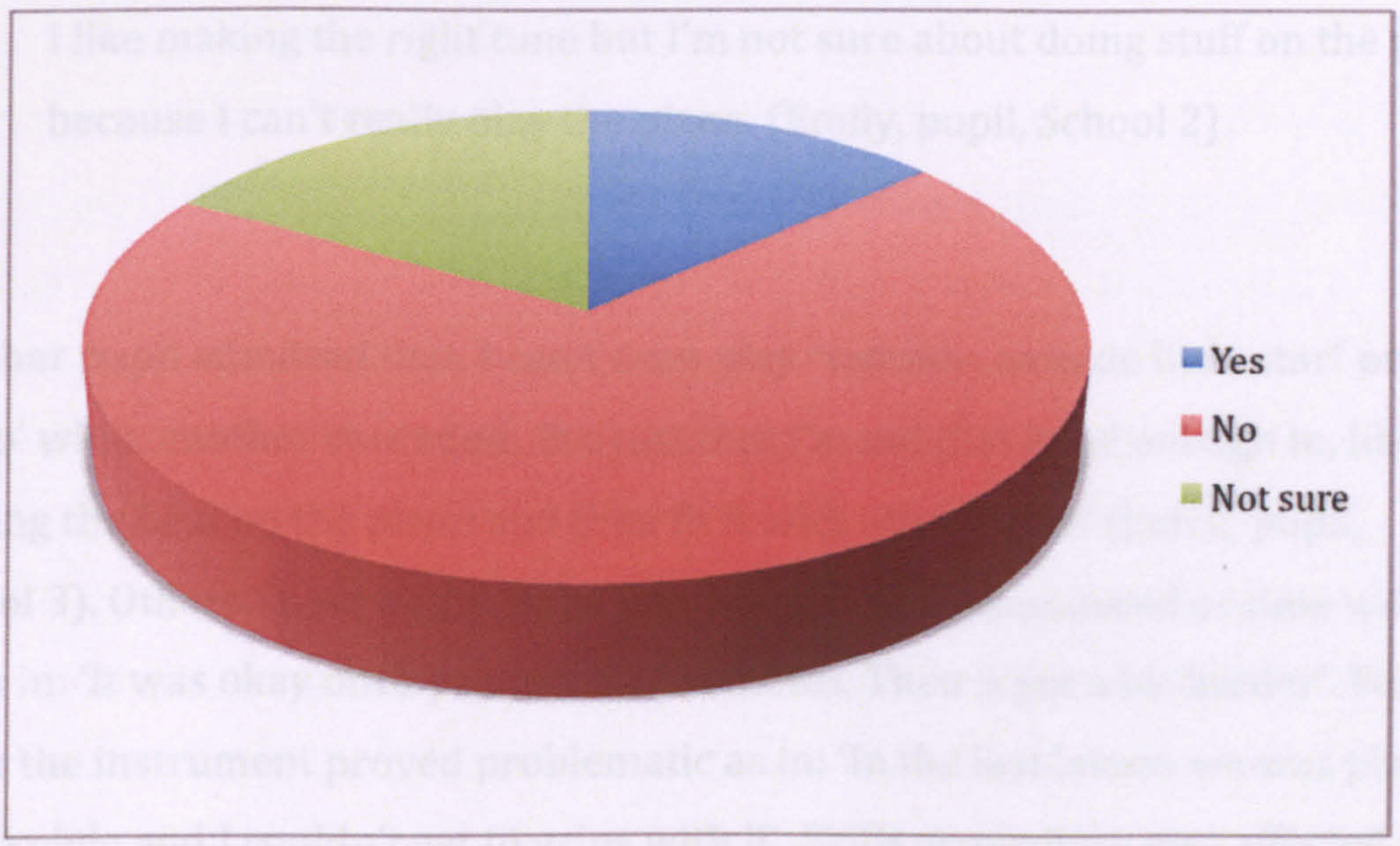

Fig. 20: Response to 'Would you call yourself a musician?'

The reasons given for not being a musician included: 'Not professionally', 'I don't actually have lessons' and 'I don't think I'm good enough'. Clearly these 'non-musicians' were aligning themselves to how the school and outside society defined 'musician'. Interestingly, for some pupils there were alternative ways in which they might be a 'musician' as in: 'maybe on GarageBand', 'I've got a keyboard at home', 'I listen to music', 'I buy things like pop books and then I try to learn them'. They were clearly aware that they were engaging in music. However, their self-definition in relation to musicianship was linked to learning to play a musical instrument.

3.3.2 – Comparisons: performance lessons and new technology lessons

In spite of the fact that most pupils did not play a musical instrument, previous music lessons had all involved instrumental work (see Appendix 2, Table 9, for a breakdown of positive and negative response to other music lessons). Many of the responses alluded to the basic inability to 'play'. As one pupil remarked:

> I like making the right tune but I'm not sure about doing stuff on the piano because I can't really play the piano. (Emily, pupil, School 2)

Another pupil admitted that 'I can't even play "twinkle, twinkle little star" on the piano' while another conceded: 'It's just that I'm not that good enough to, like, be playing the beat on the piano and then fit it with other beats' (Jamal, pupil, School 3). Others found initial steps possible but then floundered as time went on as in: 'It was okay once you learn a few notes. Then it got a bit harder'. For some the instrument proved problematic as in: 'In the last lesson we was playing the ukulele and I couldn't get to grips with it'. Skills acquisition was affected by a number of factors. For example, classroom time was cited as in 'because you had to keep practising to get it perfect' (Jessica, pupil, School 2) and 'it takes longer with a normal instrument 'cause you have to rehearse the notes and stuff' (Clare, pupil, School 2). Lack of consistency also played a part, as in ' yeh, and we kept swapping every week so it kind of made it difficult '(ibid.). There were problems of technique, as in 'to synchronise the legs and hands. You can't keep at different speeds' (Peter, pupil, School 1). This affected the ways in which pupils valued the musical outcome. For example: 'When you play it sounded quite rubbish' (Lottie, pupil, School 2) and 'when you are playing the instruments you kinda have to learn where this key is and that and the song is very slow'(Omalarie, pupil, School 3). Working in ensemble groups could also pose problems because 'not everyone could do it'. And 'some people found the music harder' (Karen, pupil, School 2). The issues surrounding skills acquisition in a classroom ensemble context is captured by the following:

> Well. We played the recorders. Some people found that tricky and some people found it really easy so we had to go at a really slow pace. Sometimes we didn't get to finish the whole book. Some people could like finish the whole book and some people couldn't and we had to go at that pace. And some people got annoyed about that. (Lottie, pupil, School 2)

It appears that in relation to peer pressure some pupils felt worried about performing as in: 'I don't like performing and things because I get nervous' (Emma, pupil, School 2). Other pupils talked of being 'scared' or 'embarrassed'. However, not all the pupils interviewed felt that performance work was problematic. For a small proportion of pupils the engagement with instruments lent their learning authenticity and value. For example:

> 'Cause normally, if we're like playing – if we are in the other room – sir said that we should choose some instruments – like a drum or guitar – and we have to make our own piece up. And when we made our own piece we were doing more work than on GarageBand. Because we were actually playing the instruments (Kevin, pupil, School 1)

Support for 'playing the instruments' also came from some teachers who felt that the practical experience had a social element to it. One in particular remained adamant that you 'need to play an instrument'. However, for the most part pupils and their teachers were conscious of the difficulties of developing performance work in the classroom context. As one teacher commented:

> With a lesson downstairs [in the keyboard room], say something like a keyboard lesson, I would say the difference between the high achievers and the low achievers is vaster, much vaster than say upstairs. Up (stairs), here on the iMacs and using loops, it allows them to express themselves more automatically, musically speaking. It's a more automatic musical experience for them than downstairs.... Downstairs using the keyboards and having slowly but surely to work out, "Does it go to that C or does it go to that C?".... (Y, male, teacher, School 3)

Quite clearly there were tensions in previous, more traditional lessons, which revolved around the pupils' ability or inability to play a musical instrument. These tensions mainly involved instrumental skills. For those who possessed skills through to those that had no skills there were issues of level, differentiation

and progression. These are difficult issues for teachers to solve in overcrowded classrooms.

The pupils related that the instrumental skills were articulated through ensemble work, which involved rehearsal and performance in an open and public domain. One respondent described it as follows:

> You do it with your musical instrument. Like you have a group. You have a lot...like every so often you do group work. One has the piano, doing the recorder .... And you play it to the class. (Emma, pupil, School 2)

Another pupil described it as: 'you have to get people in groups, like little mini orchestras' (Mark, pupil, School 1). These mini orchestras included the generally standard sets of classroom instruments and voices. The girls' school based much of its previous work on the recorder but had recently introduced the ukulele. One respondent from the boys' school commented that, 'we only had to play with percussion instruments and sing'. Tuned percussion was mentioned along with pianos and keyboards. As one of the teacher respondents reflected:

> You know, if I think about all their musical experience at School 2 it was all about having to perform at that moment in time and get it right or not get it right. It was only ever short amounts of time. (C, female, teacher, School 2)

This raises concerns in relation to group dynamics and the wellbeing of pupils[24]. The issues surrounding pupil vulnerability in performance contexts

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[24] This latter is also dealt with in relation to creativity in Chapter 4.

have been generally overlooked and require more detailed research. The current research suggests that the pupils in this sample might feel vulnerable if they cannot do something well, they get 'nervous', or if they feel that the musical outcome is 'rubbish'. The time it takes the whole group to achieve the task can also lead to lack of purpose and failing motivation.

3.3.3 – Teachers' views on musical performance and the new technology

While pupils expressed some difficulty when performing in ensembles, the teachers felt it was an important aspect of musical learning. Hence they were concerned that it was missing from the pupils' experience when working with the new technology (see Appendix 2, Table 6). For one this meant that: 'they don't learn how to play together as an ensemble. Performing together...' (P, female, teacher, panel) For others the lack of a performance context impacted on the lack of 'social interaction' that 'goes beyond the music'. Similarly 'group skills' and 'working together' were also missing from the pupils' interactions due to the 'very insular' nature of working with computers. Interestingly this last viewpoint was not shared by most of the pupils, who overwhelmingly valued working in pairs.

However, the largest area of missed learning for the teacher respondents was music performance skills. For example:

'That's the main thing, that they are not playing...'(C, female, teacher, School 2)

'Actually having to do it for themselves [is missing]' (N, male, teacher, School 1)

> 'They're not really learning instrumental skills' (W, male, beginning teacher, School 1)

This was not to suggest that they were not engaged in skills acquisition related to the technology. One respondent pointed out that 'clearly they are learning keyboard skills, but they are not learning the broader use of instruments' (N, male, teacher, School 1). A similar sentiment was expressed by Y when he suggested that 'they're not learning the 'feel' of the instrument as such' (Y, male, teacher, School 3). This absence of a physical link with the sound is one of the features of the new technology and its absence is of concern to music teachers. As one respondent suggested, in relation to the manipulation of sounds: 'Yeah, it's sort of synthesised really ... a synthesised experience of an instrument' (Y, male, teacher, School 3). Another concern for one of the teachers – by her own admission a 'classical' musician - was that somehow the absence of the rigour of musical performance would affect attitude and progress:

> My worry is that... if someone starts using loops and they don't play an instrument, for example, then they just think, 'okay, that's a good result so I don't have to progress' (P, female, teacher, panel)

It was clear that the belief in musical performance lay at the heart of the teachers' perception of teaching and learning music. For them, playing a musical instrument defines much of what it is to be musical.

3.4 – Seeing music happen: the new technology and music notation

'Pupils 'can get A in GCSE music without reading a note' (Telegraph, 2008)

Just as the majority of pupils in our schools do not play a musical instrument so they also do not read music notation. Moreover, the music that informs their musical lives is often created without regard to standard staff notation. Yet musical notation, like musical performance, lies at the heart of the teacher's conception of a musical education. As Théberge reminds us:

> Western middle-class values of musical literacy and educational methods organized around notated music have been adopted in most public school systems throughout Europe, North America, and, indeed, many non-Western countries as well. In this way, Western notation has become the dominant system of notating music throughout the world. (Théberge, 1997: 184)

Indeed our current National Curriculum states that: 'the study of music should include... staff notation and other relevant notations' (QCA, 2007: 183). It is also clear that sections of public opinion, influenced by the arts establishment and the news media, believe that musical notation is a key to musical understanding. The shock/horror headline from the online Telegraph article quoted above went on to reveal that in GCSE music: 'Only a low proportion of marks are now dedicated to being able to read or write sheet music' and that 'none of the main examination boards awards more than 20 per cent of its total marks to being able to read sheet music.' (Telegraph, 2008) This led a range of commentators to bemoan this assumed drop in standards. For example, the classical cellist, Julian Lloyd Webber, drew a parallel between language and music by stating that: 'It makes no sense at all. You would not study a language

without studying the alphabet' (ibid.). Damon Albarn, former lead singer with the pop group Blur, felt that: 'I think anyone interested in music should be forced to learn the discipline' (ibid.). In the past musical educationalists have also promoted music notation. For example, Terry quoting Plummeridge (Plummeridge, 1990), suggested that: 'musical literacy is a necessary skill for pupils who are educated in a society in which " a large proportion of music is notated"' (Terry, 1994: 107).

However, it is questionable whether a large proportion of society's current music is notated. As described in Chapter 2 the new technology offers a musical experience that eschews conventional notation. Moreover, in fields of music outside of the Western classical tradition, music is often taught aurally through a process of enculturation, without the reference to standard notations (Kwami, 1994). Ethnomusicologists who use staff notation to transcribe and analyse the music they study are, according to Cooke: 'painfully conscious that in doing this they are shoehorning Indian or Chinese music, or whatever it might be, into a system that was never designed for it (Cook, 1998: 60). Green, in her studies of popular musicians has also pointed to the many informal ways in which they learn aurally with the support of non-standard notation such as tablature and chord symbol. However, although these musics have found a place in the curriculum, their realisation in the classroom is still often yoked to formal approaches. As Green points out:

> Whilst popular music and 'world music' in general have risen to a high status on a par with classical music in the curriculum of many countries, teachers are tending to adopt formal educational approaches towards these musics which hardly differ from their approaches towards Western classical music. This is particularly well illustrated by the use of notation in secondary classrooms (Green, 2001: 180).

It is important to note that these approaches – some of which were evident in the 'learning' teachers devised for GarageBand – saddle the learning

with an aura of academe that distances the musical materials and their relevance from the pupils. For Green's popular musicians it was the inappropriate nature of the notation which was problematic. What they were seeing in the notation was not what they were hearing in the recording. For example:

> Michael felt it incumbent upon him to reproduce what he knew were inaccuracies in relation to the original recording of a song, but which were written into the printed notation (as is often the case in popular sheet music). Otherwise, he would have appeared to have been making mistakes (ibid.181).

As Green suggests, it is notoriously difficult to notate music in popular and world styles. Some key characteristics such as vocal inflection, unconventional instrumental techniques, rhythmic complexity and 'feel' have no way of being displayed effectively. When attempts are made to notate such music the end result can be extremely complex. In effect notating music that is easily comprehensible in melodic, harmonic and structural terms makes it difficult to comprehend when it is committed to paper. It is therefore surprising to find that musicians from non-classical traditions, who later become involved in formal education contexts as teachers, endorse the use of conventional music notation. Green found that:

> Their teaching approaches in general.... came across as fundamentally very similar to those of their classical colleagues, in so far as they included ... some emphasis on theory, notation, scales and other technical exercises (ibid.179).

3.4.1 – Teachers' and pupils' views of music notation

Some of the responses analysed here resulted from a question that asked teachers, 'What do you think the pupils are not learning when they use GarageBand?' As the following exchange shows, for one teacher the absence of notation from the pupils' interaction with the musical materials was of some concern.

> S (male, teacher, panel): Music notation is an obvious one..
>
> WC: So they are listening without....?
>
> S: ...the theoretical knowledge that is behind it...

This is interesting because it conflates the ability to 'read' music notation with 'theoretical knowledge'. However, a theoretical knowledge of music goes beyond the ability to read notation. Notation, for example, deals with note values, pitch, clef, key signature, and so on. The theory of music is much broader and includes understanding relating to phrase length, structure, harmonic elements and so on. Many performers read notation without understanding its relationship to the music's structural components or harmonic logic. In music classrooms at Key Stage 3 many pupils find it difficult to read even the easiest of notation. One teacher respondent was aware of this difficulty when she commented:

> The moment you start talking about notation in any sort of sense, giving them something they are supposed to read to play...(they say) 'I can't do it. I can't do it!'(C, female, teacher, School 2)

The pupils who made comments on notation support this. When asked to compare using the new technology with previous music lessons some pupils alluded to the 'difference' in notational terms. For example, one pupil stated:

> 'Cause it's like hard to write notes without a computer 'cause, like you don't exactly know which notes they are. So it's harder. You don't know, like, what notes they are like with those little black dot things.... I don't know what they are. It's just easier... it's just easier to write. (Amarae, pupil, School 2)

Here the pupil alludes to the impossibility of writing music using conventional notation. However, given this difficulty in using notation for creative ends it was surprising that another teacher saw the loss of notational learning in terms of the absence of a sort of authorial authenticity as in:

> Well, notation I suppose is your biggest loss there. That's the biggest bone of contention with it you know. The idea that... I remember when I was at Uni. I read an article and it was from a really classical perspective and it said that any composer worth his salt has to hand draw musical notation every day just to feel the pencil slide against the paper (Y, male, teacher, School 3)

This interesting return to a 'classical perspective' and the 'composer worth his salt' is, as discussed below, an indication of the contention that surrounds music notation and musical learning in school. This particular teacher was very aware of the cultural dissonance that existed between his pupils and the more traditional music curriculum. He was a young teacher, aware of the pupils' musical lives and committed to motivating these pupils through the use of the new technology. Yet, when asked if it mattered if they did not learn music notation, he was conflicted. Here is his response:

> It doesn't matter to these pupils. It doesn't matter to them really. You know, it's such a controversial line to tread, you know, me saying here, "Oh it doesn't matter to them" and what am I inadvertently saying? "Oh no, they're not suited to classical music? That's not for them" Myself as a

> teacher, who wants to do the best for these pupils and to get them experiencing as many sounds and to get them using musical technology as an aid for that. But then again in the same sentence I'm saying it doesn't matter. (Y, male, teacher, School 3)

So by not teaching them music notation he was prejudging them as 'not suited'. On the other hand he was aware that using music technology would aid and support their involvement and learning. One of his pupils characterised previous music lessons at the school as: ' just learning off paper'. The paper in question most likely had notation on it. However, in some recent reports back from the classroom there is evidence to suggest that, while teachers provide pupils with music notation on 'paper' to support performance work, they supplement it with other support. Here is a PGCE students describing the handling of notation in her school:

> In my experience notation is present in pupils' learning but it is not being taught. By this I mean that while notation is present on worksheets, the notes will always have letter names written underneath. Having asked pupils whether or not they pay attention to the notes the answer is nearly always 'no' (Venables, 2010: 9 coursework essay).

Hence the pupils, for their part, often learn the music by rote with little reference to the printed copy. If the 'paper' does serve a purpose it is as an aide memoire to their practical music making. Where practical engagement is absent from notation the situation is even more disorientating for pupils. As Odam points out:

> Too often the symbols we use appear to get in the way of the sounds they represent; sometimes they replace them altogether... reliance on the decoding of symbols – reading music notation – has become the sticking point for many teachers and also a disincentive to many pupils...the direct

> teaching of notation has been in opposition to the provision of real musical experience (Odam, 1995: v).

Nevertheless, the 'sticking point' of musical notation continues to pervade the curriculum. So it is no surprise to find out in the recent Ofsted report that 'ICT was... used mainly as a notational tool' at Key Stage 4 (Ofsted, 2009: 35). The report felt that this was a narrow use of technology. In terms of its 'disincentive' effect, they found that the 'inappropriate use of notation' was the 'most common inhibitor in engaging musical intelligence' (ibid.43). However, Ofsted clearly cannot be seen as discounting music notation (after all it forms part of the National Curriculum). So while reaffirming it to be 'an essential part of musical learning' they nevertheless recognise that 'unrelated to the sound it represents' (ibid.43) it can pose problems for pupils. Here Ofsted appears to be sitting on the fence. They are unable to condemn the use of notation but are clearly of the view that it may hinder pupils' 'musical imagination'. They are also aware that exam syllabuses, even the ones at GCSE, still require some knowledge of musical notation. Contrary to the Telegraph's report, pupils still believe that an understanding of musical notation is necessary to secure success at GCSE. For example, when Wright investigated pupils' perceptions of GCSE music she discovered that:

> Pupils... perceived themselves to be at a disadvantage if they did not read notation fluently, as many instrumentalists from a rock, pop or jazz background do not (Wright, 2002: 240).

3.4.2 - The values embedded in music notation

Music notation does not only represent sound. It comes loaded with a whole host of assumptions. Cook points out that while it functions as 'conservation' and 'communication' it also 'is integral to the conception of music, to the ways

composers, performers, and all other who work with music imagine and think about it' (Cook, 1998: 52). Initially invented as a set of descriptive signs to aide the reproduction of performance it soon evolved, in the fourteenth century, into a system whereby composers could manipulate it to tell performers what to play (Théberge, 1997). In doing so it diminished the role and function of the performer. Up until the 18th century performers had contributed to the structure and content of musical works. However, by degrees this was eliminated and composers increasingly took control of all aspects of performance. This led to the growth of the great composer who, with the aide of a conductor and highly trained and compliant professional orchestra, wrote ever increasingly complex music. Hence we get the development of the composer as 'author or originator of the music' and the importance of the 'authoritative' text (Cook, 1998: 25). Now notation did not only represent sound, it also represented the actual intentions of the 'great' composer. As Théberge points out: 'you never simply learn to play a musical instrument; in the process, you also assimilate both a repertoire and a set of musical/aesthetic values' (Théberge, 1997: 182).

A number of other issues arise in relation to the use of music notation as a receptacle for 'great' music. Small has suggested that the reliance on the notated score in education places the student in the position of receiving a product (Small, 1980). Like any other product, the ability to read music notation and to use it in musical performance becomes a commodity that can be bought and sold. Hence only those who can afford it get to participate. As Bourdieu points out in relation to piano playing and social class:

> Differences linked to social origin are no doubt most marked in personal production of visual art or the playing of a musical instrument, aptitudes, which, both in their acquisition and in their performance, presuppose not only dispositions associated with long establishment in the world of art and culture but also economic means (especially in the case of piano-playing) and spare time (Bourdieu, 1984: 75).

Gladwell's account of the stratification of violin players at Berlin's Academy of Music supports this view by stressing the importance of 'time to practice' in relation to the development of musical skills and literacy. He relates how the Academy's professors divided the violinists up into three groups: 'elite performers', the ' merely good' and 'music teachers' (those 'unlikely to ever play professionally'). The violinists were all asked the same question: 'Over your entire career... how many hours have you practised?' He goes on:

> Everyone from all three groups started playing at roughly the same age, around five years old. In those first few years, everyone practised roughly the same amount, about two or three hours a week. But when the students were around the age of eight, real differences started to emerge. The students who would end up the best in their class began to practise more than everyone else: six hours a week by age nine, eight hours a week by age twelve, sixteen hours a week by age fourteen, and up and up, until by the age of twenty they were practising – that is, purposefully and single-mindedly playing their instruments with the intent to get better – well over thirty hours a week. In fact, by the age of twenty, the elite performers had each totalled ten thousand hours of practice. By contrast, the merely good students had totalled eight thousand hours, and the future music teachers had totalled just over four thousand hours (Gladwell, 2008: 38/9).

Given that this is the amount of time required to be a violin player – even a lowly 'music teacher' – it is no surprise to realise, as Théberge reminds us, that formalised musical training has, until quite recently:

> been associated with either relatively exclusive social groups (in the Middle Ages, the church or the municipal guilds) or with the aristocratic

> and the middle and upper classes (those who could both afford a formal education or private instruction and had the leisure time to enjoy it) (Théberge, 1997: 182)

We should also note that learning to play an instrument from the text of the musical score changes what is being learned. Here the need is to get the notes in the right place at the right time. This leads to a focus on technical mastery that, in the absence of Ofsted's 'musical imagination', can lead to arid and tedious technical exercises, what the American classical pianist Arthur Loesser calls 'the simple athletics of piano playing' (Loesser, 1954: 254).

3.4.3 – Seeing music with the new technology

The development of the new technology grew out of sound recording and was initially, somewhat like musical notation, a reproductive technology. As Théberge reminds us:

> Both notation and sound recording were initially conceived of as primarily mnemonic or reproductive technologies, but each has, in its own manner, become productive; that is, each has become a vehicle for the planning and creation of musical works (Théberge, 1997: 176). (P176)

As we saw in Chapter 2, a large part of the productive aspect of the new technology is the ability to review, see and hear, the sound in real time. Rather like a score, the music scrolls from left to right showing blocks of sound. The polyphony of the parts, along with their duration, can also be easily seen. The music can also be displayed in other ways, for example: the display of

waveforms, graphical grids that display note information and, in some programs, standard musical notation.

In the GarageBand lesson pupils for the most part interacted with blocks or rectangles of sound. This visual link to the loops – a graphic representation that displays sounds being layered and laid out in a real time – is in some ways akin to notation. In many ways it emulates a musical score, but without the notes and musical expression. However, unlike a musical score, it was easy for the pupils to grasp. For example:

> So you don't have to sit there learning it and taking ages to do it. You just go through it really quickly (Emma, pupil, School 2)

No one, pupil or teacher, found this aspect of the programme problematic. As one teacher stated it was: 'simply because the loops obviously come in blocks, very distinct blocks of sounds' (Y, male, teacher, School 3). Seeing sound in this way is something relatively new in the Key Stage 3 music classroom[25]. Moreover it chimes with the digital childhoods that pupils lead in relation to the converging visual media offered by television, the Internet, computer games, and the mobile phone (Buckingham, 2005: 8). Buckingham points out that these screen-based media dominate pupils' lives and suggests they have become 'technologies of representation' which are for the most part 'interactive' (ibid.9). This was borne out by the classroom observations discussed in the previous chapter. Pupils appeared to be engaging with and responding to the images on the screen. That engagement was for the most part motivated and energized. Pupils embarked upon heated discussions and freely reconfigured the screen, deleting and adding elements as they saw fit. They were responding to what they were seeing and hearing in real time.

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[25] Programmes such as Logic and Cubase use this type of display but are generally only used at GCSE and A level.

Of course the blocks of sound they were seeing are a general representation of sound. They can 'hear' the musical detail but they cannot see it. To recreate the detail of what they hear from scratch might be problematic. As one teacher said:

> They can pick a groove that they like and say: 'right I'll use that one'. But if they heard that and then had to play it 'in' [to the computer] then they wouldn't be able to do it, unless they were told. (D, male, teacher, panel)

What I think the teacher means here is best articulated through an example. Pupils may hear, choose and use a drum loop involving the instruments in a drum kit. But they will not know what specific instruments – hi-hat, side drum, bass drum etc – are playing within that loop. A musically notated drum part might supply this information. In an informal setting a drummer may just play along and 'discover' what each percussion instrument is doing. But these pupils are ignorant of the disparate elements that go to make up the loop. We then need to ask: 'is it necessary for them to know how to replicate the loop?' After all they have their loop and they can use it within their piece. It is only if they need to 'perform' the loop on the drums or 'recreate' the loop in another medium – perhaps by programming different drum sounds on a midi sequencer – that they would need to know the detail. What they 'know' about the loop is that it sounds right and fits into their music.

3.4.4 – Summary: seeing music happen

Traditional music notational learning was missing from the pupils' interactions with GarageBand. However, like performance, music notation is distant from many pupils' lives. Only a small percentage of pupils come to school able to read music. It is also a difficult skill to acquire and to apply. It does not necessarily lead to musical understanding and it comes loaded with values that may not be

appropriate to a curriculum that purports to offer access to all.

The new technology offers a number of ways of 'seeing' sound. However, the graphical interface used in the research mainly relied on blocks of sound that lacked the detail offered by notation and other graphic representation. Nevertheless, the pupils found the interface easy, attractive and engaging. The visual representations chimed with other digital media that already form part of their lives outside school. While the information provided by the programme may not allow for the performance or recreation of the loops, it may be sufficient to engage pupils and enhance their musical choices and understanding.

3.5 – Listening to the new technology

'... editing the sound of the music'. (Connie, pupil, School 2)

Listening, as an activity, holds a tenuous place in the Key Stage 3 curriculum. With the classical canon supposedly in retreat, and the burgeoning of popular and world music styles, what type of music are pupils to listen to? Perhaps more importantly how are they to listen and for what purpose? The National Curriculum states that:

> Music learning develops pupils' critical skills: their ability to listen, to appreciate a wide variety of music, and to make judgements about musical quality (QCA, 2007: 179).

This is an interesting statement. As pupils 'listen' they are expected to 'appreciate' a broad range of music and make 'judgements' about its 'quality'. In effect it harks back to a previous type of educational engagement with musical listening that was called 'music appreciation'. In other sections of the National Curriculum document the authors are at pains to link listening to the activities of

'performing and composing'. They should be: 'seen as interrelated skills and processes that enable the development and demonstration of musicianship and musical understanding' (ibid.182).

However, the notion of listening as a discrete activity lingers on in the document. It is also there in the GCSE and 'A' level exams where 'listening' becomes a separate examination activity (AQA, 2009; EdExcel, 2009). The reasons for this are not hard to find. A number of commentators (Swanwick, 1988; Pitts, 2000) have charted how music appreciation, with its concomitant emphasis on the preservation of a musical heritage, formed a key part of the music curriculum in the 50s and 60s. In this context pupils were seen as the:

> '... inheritors of a set of cultural values and practices, needing to master the relevant skills and information in order to take part in musical affairs (Swanwick, 1988: 10).

In the 1970s a more interactive approach to music learning developed. However, focused 'listening' as an activity in itself continued to be – and in some schools still is – part of the music lesson. Cook in his analysis of the musical values associated with composing, performing and listening suggests a link to 'the classic industrial economy, based on the *production* of goods which are subsequently *distributed* and finally *consumed* by the public who purchased them' (Cook, 1998: 15 author's italics). This hierarchy implies a set of values that define the role, function and worth of the different groups. Cook continues:

> There is, in short, a nexus of interrelated assumptions built into the basic language we use of music: that the key personnel in musical culture are the composers who generate what might be termed the core product; that performers are in essence no more than middlemen, apart from those

exceptional interpreters who acquire a kind of honorary composer's status; and that listeners are consumers, playing an essentially passive role in the cultural process that, in economic terms, they underpin (ibid.17).

Adorno grouped the listener into a further hierarchy of eight types. These were what he termed 'types of musical conduct' (Adorno, 1962) and were categorised as follows: the 'expert', the 'good listener', the cultural consumer', the 'emotional listener', the 'resentment listener', the 'jazz listener', the 'entertainment listener' and the 'musically indifferent' (DeNora, 2003: 85/6). These different types were defined by their ability, or lack of ability, to apply a set of critical listening skills. Hence the 'expert' (number 1 listener) engaged in 'structural hearing' and was 'fully conscious', while the 'entertainment listener' (number 7) was 'subjective', 'passive' and 'opposed to the effort a work of art demands' (ibid.). The reasons for Adorno's views are complex and were part of the social and political landscape of the time. Interestingly, DeNora claims that he was concerned 'with the breach that had been effected between the music producer (composer) and music consumer (listener)' (ibid.87). Nevertheless, his hierarchy clearly attributes a set of values to the type of music consumed.[26]

Adorno was also suspicious of musical consumption that was experienced through the emerging technologies of radio and recording. However, his colleague at the Institute of Social Research, Walter Benjamin, took a different view and recognised the significance of reproductive technology in relation to the arts. He stated that:

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[26] For Adorno, Beethoven and Schoenberg were great radicals, Stravinsky and Tchiakovsky were dismissed and popular music was distained (see DeNora, T. (2003), *After Adorno*. Cambridge: Cambridge University Press.)

> Around 1900, technological reproduction not only had reached a standard that permitted it to reproduce all known works of art, profoundly modifying their effect, but it also had captured a place of its own among the artistic processes (Benjamin, 2003: 253).

One of the profound effects of this reproduction was to reduce the 'aura' of the work of art. Hence it would lose its attributes in terms of ownership, restricted exhibition, authenticity, and cultural value. It would also have the effect of turning consumers into producers. Benjamin cites the growth of literature and literacy over the centuries as an example of how the public at large can assume ownership through technology. With the 'extension of the press' and the reciprocal 'letters to the editor' the distinction between the author and the public breaks down:

> At any moment, the reader is ready to become a writer. As an expert – which he has had to become in any case in a highly specialized work process, even if only in some minor capacity – the reader gains access to authorship (ibid.262).

Katz outlines the possibility of developing authorship in music when he probes the historical development and characteristics of recorded sound:

> 'Recorded music is mediated sound. It is sound mediated through a technology that required users to adapt their musical practices and habits in a number of ways (Katz, 2004: 2)

Music becomes a consumable 'thing': preserved, tangible, transportable, saleable and collectable. Its portability gives rise to the advent of the 'solitary listener'

who listens to a personal collection of music: 'Record collecting represents a relationship with music that helps us, in some part small or large, to articulate and, indeed, shape who we are.' (ibid.11). This solitary ownership challenges the more traditional approaches to listening in educational contexts and calls into question the teacher role of gatekeeper in the selection and dissemination of acceptable and relevant musical materials. This is acknowledged in the research undertaken by Green into informal learning in the classroom:

> Perhaps the prime factor is that informal learning always starts with music which the learners choose for themselves. Therefore, it tends to be music which they [the pupils] already know and understand, like, enjoy and identify with. This is distinct from most formal educational settings, in which the main idea is to introduce learners to music that they do not already know, and which is usually selected by the teacher (Green, 2008: 10).

In Green's scenario, once the pupils choose their music, they copy it through a process of listening and performing with others. However, with the advent of digital sampling technology any sound can be copied, removed from its original location and used in a variety of new contexts. This is what Schafer called 'schizophonia' (Schafer, 1977) – the splitting of sound away from the maker of the sound. However, it would be wrong to assume that once the sounds are 'split' from their original source that they lose any sense of reference back. As Rose points out:

> Sampling in rap is a process of cultural literacy and intertextual reference. Sampled guitar and bass lines from soul and funk precursors are often recognizable or have familiar resonances.... These samples are highlighted, functioning as a challenge to know these sounds, to make

connections between the lyrical and musical texts. It affirms black musical history and locates these "past" sounds in the "present" ' (Rose, 1994: 89)

This type of manipulation of sound leads to a break down in the distinction between composer, performer and listener. As the handling of sound moves from consumption towards production so the listener increasingly has opportunities to become the composer. As Katz says:

> Sampling has transformed the very art of composition. When composers sample existing works, they begin with expressions, transform them into ideas, and then again into expressions. Sampling obviates the need for notation or performers, since the final product is not a score requiring interpretive realisation, but a document of binary numbers requiring electronic conversion. Composers who work with samples work directly with sound, thus becoming more like their counterparts in the visual and plastic arts....Sampling is a rich and complex practice, one that challenges our notions of originality, of borrowing, of craft, and even of composition itself ' (Katz, 2004: 157)

3.5.1 – Changing landscapes: pupils' listening patterns

The pattern of certain pupils' listening habits and preferences was probed during initial questioning (see Appendix 1c). Most pupils listened to music but they accessed it in a variety of contexts. So mention was made of 'downloading' music – sometimes from stores like iTunes, sometimes from file sharing networks such as Limewire – which implied computer use. Consequently playback included computer based media players such as 'WMP' (Windows Media Player) and 'iTunes'. However, more surprising were the other contexts for listening. Pupils talked of doing it 'on my phone', 'playing games...when I play games I can be

listening to music' and watching a screen, as in 'Yeh, I'd rather like to see the video as I listen to it'. This reminds us once again of the converging digital worlds of young people where the sites for listening are varied in terms of place, function and focus (Buckingham, 2005). In one instance a pupil was using mp3 files in conjunction with GarageBand at home as indicated in this exchange:

WC: What do you like about working with GarageBand?

Elle (pupil, School 2): I like the fact that you can add different songs and then edit it and then...what I did is I can get songs off my iPod and put them in and edit them and think it just is really good.

WC: So where do you get the songs?

Elle: I get them on iTunes –website- and then they go onto my iPod and then it goes onto GarageBand. If you click on song list it comes up the ones that are there.

WC: And then you drag them and cut them up and that sort of thing?

Elle: Yes

This type of home link was rare but this pupil felt proud enough to play one of her 'mash-ups' to the rest of the class. Her choice of music was similar to the preferences expressed by the pupils in School 3. These were listed as 'Grime', 'R&B', 'Hip Hop' and 'Funky House'. Interestingly these are urban dance-based musics that make much use of rapping and the loop based technology available in GarageBand. This link to the real world of music is an important element in pupils' interaction with GarageBand. As one of the teacher respondents pointed out:

> I think.... that if you look at where the industry is going there are a lot of artists these days, which unfortunately have taken away some of the instrumental skills at times, but the industry is lending itself to that thing

now, where a lot of R&B artists put loops in and then rap over it and 'Bob's your uncle' you've got a track and it's number one. If we're talking about general music education we should still teach the instrumental skills but there is a big emphasis in the industry on loops. (S, male, teacher, panel)

Not all the pupils wanted to name a genre of music as in: 'It depends really 'cause sometimes music comes and a tune gets stuck in your head. So you just feel like downloading it and listening to it' (Peter, pupil, School 1). Another pupil was more all encompassing in her preferences, as the following exchange suggests:

Miriam (pupil, School 3): I listen to different types of music. If it attracts me I'll listen.

WC: So you don't mind what it is?

Miriam: No. I listen to classical sometimes.

WC: Any favourite singers?

Miriam: I like Whitney Houston and Celine Dion

Buckingham suggests that 'schools have been relatively unaffected by the advent of digital technology' (Buckingham, 2005: 8) and this partial snapshot of pupils' listening patterns and choices appears to confirm this. In one school mobile phones were banned for pupils and teachers alike. In all the schools there was no recognition of mp3 players or file sharing. The school that used video in conjunction with GarageBand was engaging in a totally new concept. Although music, perhaps more than any other subject, is increasingly mediated through a range of new technology, the educational use of these technologies is still largely absent from the classroom.

3.5.2 – Listening with the new technology

The GarageBand interface encourages pupils to audition sounds. Hence they actively engage in making choices based on what they hear. For example, here the pupil is rejecting and accepting different beats, as in:

> When you like listen to one beat and you are like, 'oh, I don't really like that one', and you go to the next one and go 'that'll do' and you just put it together and it just makes a very good sound (Omalarie, pupil, School 3).

One teacher respondent suggested that pupils felt easier about making their choices because the music was 'already there', that is, not initiated or chosen by them. He said:

> I think they liked the idea that the sounds were already there for them. It was almost as though there wasn't so much pressure on them to create something, that their friends or their peers would judge them on, because the sound recordings were already preset for them. (Y, male, teacher, School 3)

This reminds us that people can feel vulnerable in contexts where there is a 'social evaluative threat' (Wilkinson and Pickett, 2009). However, their competence and choices are not called into question when they audition the GarageBand sounds. The sounds on offer, while broadly chiming with their own musical world, appeared to take the pupils beyond that musical world and encouraged them to explore. Hence the same respondent added: 'If I'd asked them, "what sort of music are you into?" they are really restricted in terms of

what they would say....[so]...there was a lot more experimenting going on with different types of sounds' (Y, male, teacher, School 3).

Once the choices were made, and dragged onto the time line of the main screen, a degree of experimenting went on. For example: '.... with all the different sounds and you are kind of experimenting and ... you can see what fits and what doesn't. 'Cause you have to kind of listen to it.'(Eleanor, pupil, School 2) The provisionality of the programme allowed pupils to try things in a number of ways as in: 'it allows you to experiment and then erase it and try again and do it. Erase it and do it again' (Lottie, pupil, School 2). There was some suggestion that pupils felt empowered by the range of choices offered by GarageBand, for example:

> Well like mixing and matching...mmm, well I'm putting things together to see how it s(ounds)... I'm experimenting and just see and then I can change my choices like several times 'cause there's a lot of variety of things there so that in the end I'll come up with something. (Miriam, pupil, School 3)

Other aspects of manipulating the sounds on the screen were referred to as: 'planning where the instruments come in' and 'editing the sound of the music'. (Connie, pupil, School 2)

Over and above auditioning, making choices and manipulating those choices pupils mentioned that they were 'remixing' by 'taking different parts of different songs and putting them together and adding sound effects' (Alexandra, pupil, School 2). Another pupil talked of' 'testing out the different volumes of the music' (Jamal, pupil, School 3). The pupils were also positive about the quality of the sounds as in: 'and it sounds really good' (Amarae, pupil, School 2) and ' Yeh

the sounds were really good. They go with the sort [of music] that we were meant to be doing....' (Devante, pupil, School 3)

The range of sounds available in GarageBand was generally applauded. When asked what they liked about the programme a large percentage mentioned 'choice' (see Appendix 2, Table 1). As one pupil stated: 'you've got a lot of choice and you can do lots of different things' (Alexandra, pupil, School 2). Hence pupils referred to instruments in terms of, 'you can use loads of instruments and they're different ...a wide variety of stuff' and '...yes, it's ...generous... generous of instruments...' (David, pupil, School 1) Others spoke of the character of the music as in, 'different elements of music', and 'many options to choose from'. Nor was the music locked into one particular style. As one pupil commented: 'I like how its not just one type of music. There's like loads of variety to choose from so that is really good'. (Hannah, pupil, School 2) The sounds, once manipulated by the pupils, took on new characteristics as in: 'you can use any type of music and bring them together and you get a new sound... of music'. Perhaps this pupil summed up the quality, range, authenticity and creative opportunities of the sounds when she said:

> Well there's a lot of different tunes that you can do in it. Like some of them you put them together and they sound really good...it creates harmony, like music stars.... (Peter, pupil, School 3)

The teachers were also aware of the potential of GarageBand to present sound in a unique and interactive manner. For example, one teacher respondent stated: 'they're learning about the sounds... they're learning what they actually sound like, and for a lot of sounds, that's not easy to actually show without something like GarageBand' (N, male, teacher, School 1). Another talked of the pupils developing a critical perspective in relation to sound when they were,

'learn[ing] to discriminate....use[ing] their ears'. The fact the sounds were 'seen' also played a part in this process:

> And also, one thing is they can see it's correct and it sounds correct. If they were working with instruments, they might find themselves working for 5 minutes before someone says, "no it's wrong". So there's something about hearing things done correctly. (N, male, teacher, School 1)

Although not part of the activities observed on the research project, one member of the teachers' panel suggested that the sounds available in GarageBand could serve as a model for pupils to copy or emulate for inclusion in their own creative work at exam level[27]. He said:

> ... they can't use loops in GCSE.... when we're doing a composition. I have to say to them "It has to be your own input" and sometimes I might see them putting in a loop and I say "What are you doing?" and they say "No, I want to copy it. I want to hear the loop and then imitate it." (M, male, teacher, panel)

3.5.3 – Summary: listening to the new technology

To return to the question posed at the beginning of this section: 'what are pupils to listen to, how are they to listen and for what purpose?' This research suggests that new technology in general, and GarageBand in particular, can address the 'how' and 'what' of listening. It promotes interactive engagement with actual sounds in real time. As we shall discuss in the chapter on creativity, it also allows

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[27] Some exam boards do not accept ready-made loops in composition work. This is discussed at greater length in the section on assessment and value

pupils to gain ownership of the sounds through the choice, context and manipulation of the sounds. At its best it can result in a truly active response which encourages pupils towards discriminating judgements. It also seems feasible to hope that the digital context of GarageBand will encourage other expressions of the new media. The software already has the ability to produce mp3 files and ring tones. In turn this could provide the music with purposeful intent and new audiences such as the 'numu' online sharing site for young peoples' music (numu, 2010).

The 'what' of listening is more problematic and issues surrounding the range of choice of listening materials remain. How the pupils access these choices, what they consist of in terms of style and content, their sheer weight in numbers and their organisation and categorisation will all have to be carefully considered by teachers. Other issues regarding the validity of ready-made materials may also be of concern to educationalists. However, they will have to acknowledge that, perhaps for the first time, the non-performing musician can authentically engage in a listening experience which has purpose and value.

3.6 – Musical learning at Key Stage 3

'Can anyone tell me what an ostinato is?' (Music PGCE student to a class of 11 year olds)

What do pupils learn in the music lesson? Philpott categorises musical learning into three areas: 'knowledge "about" music', the 'knowledge "how" of music' and the 'knowledge "of" music'. These divisions might be further characterised as: factual knowledge of – or background information about – music, technical and musical skills that relate to the playing and making of music, and an 'understanding relationship' of music 'by direct acquaintance' (Philpott, 2007:

29/30). There are many linked areas between the categories that inform and complement each other. Moreover, the last category suggests that what teachers might perceive of as musical 'learning' may not be the same as the musical knowledge possessed by the pupils. For example, how might we categorise the learning displayed by those hip-hop DJs who go 'digging in the crate'?[28] Quite clearly our ideas about the nature of musical learning are guided by a set of cultural and aesthetic assumptions. It is also influenced by where the learning takes place. The exploration of formal and informal learning in music education is already well under way (Green, 2008; D'Amore, 2009). Finney has recently explored this area – what he refers to as the 'regulated and unregulated' areas of learning (Finney, 2007: 17) – and he maintains that, in certain contexts, this 'on the edge' learning could result in a valuable source of personalised musical learning. However, he is aware that questions still need to be addressed in relation to how 'classroom music is to be conceptualised and organised' (ibid.19) in the future. It is also worth noting that formal and informal learning can take place in a variety of sites. Folkestad suggests that to always equate school with formal learning and out of school with informal learning is simplistic and 'actually false' (Folkestad, 2005: 283). This is particularly true in an increasingly technologically mediated world where formal instruction may arrive in the learner's home via YouTube.

Over and above what pupils might learn and where that learning takes place is the issue of trying to predict what pupils will learn in the course of a classroom activity. As Swanwick reminds us:

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[28] Katz relates how '...digging is a way of life among hip hop DJs, for their creativity is judged in part on their ability to find rare, unusual and catchy tracks' Katz, M. (2004), *Capturing sound: how technology has changed music.* Berkeley and Los Angeles: University of California Press. (p.11)

There remains a strong suspicion that the formulation of objectives *before the event* tends to drive out the magic of music and the spontaneity that enlivens human relationships. It is indeed an open question as to whether the *prediction* of objectives is essential or whether we should not rather be prepared to recognize achievement when it actually *occurs*, thinking in terms of learning outcomes rather than objectives (Swanwick, 1988: 126).

The idea of 'magic' and 'spontaneity' may come as a surprise to teachers who are currently exhorted by their managers to start every lesson with 'learning objectives' on the board. This approach, initially introduced with the Key Stage 3 national strategy (DfES, 2006), also takes into account the legal requirement to 'deliver' the National Curriculum and the subsequent need to assess pupils according to levels. As we know from previous sections of this chapter, the National Curriculum defines, colours and constrains what might be perceived of as musical learning. Remember that 'performing, composing and listening' are 'key processes' in the learning. Moreover, pupils should be able to critically 'review and evaluate' their own work and the work of others (QCA, 2007). While this attempts to add a critically reflective element, it also seems to want to contextualise music in time and place while fostering some sort of creative perspective. The small print of the document's 'explanatory notes' appears to suggest how this might be done. Here we find the detail relating to 'musical structures', 'styles, genres and traditions', 'musical elements', 'musical devices', and 'musical tonalities' (ibid.128). These categories can sit uncomfortably in relation to holistic musical learning. Nevertheless they often dominate teachers' thinking when they come to design a scheme of work. For example, the blues form, categorised as a musical structure, is often seen by teachers as an opportunity to teach musical tonality. This leads to an arid exploration of the harmonic features of the blues. This overemphasis ignores the main elements of the blues, namely their complex melodic and emotional expression. Similarly the need to teach a range of 'styles, genres and traditions' leads, particularly in the case of world music, to many difficulties of authenticity and articulation. Green suggests that these include:

the difficulties of incorporating music from one culture into another; the challenges of adopting, within formal education, music which is transmitted outside formal education; the lack of fit between the cultural assumptions that surround music and musical practices in different cultures....(Green, 2008: 13)

The accepted model of the Key Stage 3 music curriculum consists of six-week excursions into topic areas which unpick living music into various genres, devices, elements, structures and so on. This compartmentalising of musical learning is what Ofsted has recently called 'the nuts and bolts' of music where the emphasis on abstracted 'musical devices' result in 'formulaic' response (Ofsted, 2009: 47). This is not new. Similar thinking about what to teach in music lessons was apparent in a survey of teachers' attitudes taken in 1998:

> a number of teachers declared that they used classical music, along with a variety of other musics, in order to teach what they often referred to as musical `elements' (a concept used in the National Curriculum documentation), `devices', or `universals' that cut across styles (Green, 2002: 14).

The 'ostinato' may be seen as such an universal device or 'nut' or 'bolt'. The Grove dictionary defines it as: ' the repetition of a musical pattern many times in succession' (Sadie, 1994). So perhaps this is the answer to the question: 'Can anyone tell me what an ostinato is?' The pupil positing such an answer would certainly demonstrate learning in the 'knowing about' category. However, other pupils might describe it in their own words, recognise it aurally, recognise it visually, play it, or consciously use it in a piece of their own music. Yet other pupils may use an ostinato but not be able to name it or describe it. What is musical learning? It remains a contested and foggy area. In the analysis that

follows I have relied on what the pupils and their teachers thought they were learning.

3.6.1 - Learning and the new technology

The abstracted 'nuts and bolts' of music were clearly apparent in the taught element of the GarageBand lessons observed during the research. Musical structures (for example, rondo form, verse, chorus, binary), musical elements (in particular timbre and texture), and musical devices (synchronisation, 'humour') were all part of the learning drawn from the National Curriculum. It is interesting to note that, even within the context of the new technology, old warhorses of the curriculum – such as instruments of the orchestra and binary form – continued to hold sway.

It also became apparent that there were a number of different concepts of learning going on. These included: what the teachers thought they were teaching, what the pupils thought they were learning (which was, with some exceptions, often the same as what the teachers thought they were teaching), and an area of learning that can be said to have occurred over and above the intentions and perceptions of teachers and pupils. These are discussed below. Areas of missing learning relating to performing and music notation have already been discussed above. There is also an area of learning, often difficult to define, which deals with creative response which I intend to discuss in the following chapter concerned with creativity.

Issues relating to GarageBand's ability to promote learning were mainly probed through two direct questions: one that asked the pupils what they thought they were learning; and one that asked the teachers what they thought the pupils were and were not learning. As previously mentioned, most of the

pupils referred to the 'intended learning' apparent in the lesson– that is, the learning that the teacher had devised and shared with the class through aims and objectives (see Appendix 2, Table 5).

An overview of the intended learning that was 'taught' by the teacher can be seen in figure 21.

Area of learning	**School 1**	**School 2**	**School 3**
Musical structure	Rondo form: ABACADA Eight bar phrases	Verse/Chorus Intro	Binary form
Timbres (instruments)	Woodwind Brass Percussion Strings	Drum Kit Bass guitar	None
Devices	None	Melodic riff	Synchronisation Humorous sound effects
Style/genre	None	Rap	Old rock Rap
Creativity	Choice, construction, mixing	Choice, construction, mixing, lyrics	Choice, construction, mixing
Skills	None	Keyboard Technology	None

Fig. 21: Areas of 'taught' intended learning

In addition to the areas outlined above were other areas of related learning. Sometimes this was previous learning, as in the work that School 1 did in relation to instruments of the orchestra. In other instances it was complementary learning which occurred in conjunction with practical work, as in the School 2's 'musical features of rap'. School 2 also tried to deal in a structured way with the skills needed to manipulate the programme. However, others dealt with these ad hoc as the project developed and queries and issues

emerged. In School 3 the learning was reconfigured to include new elements as the teacher gauged pupil response.

3.6.1.1 – Intended learning

Musical structure played a part in all three of the classroom projects observed. However, while it was applied most rigorously in School 1 there was a much looser association in School 3. School 2 was somewhere in the middle. Hence structure was the largest area of learning in terms of response (see appendix 3). From one teacher's point of view it was: 'the first thing you teach' while another saw it as:

> ... to create a coherent song with a difference between a verse and a chorus. That was really the main thing that I wanted: to get into that idea of, you know, the verses and chorus are related (C, female, teacher, School 2)

And the pupils agreed. They spoke of: 'learning how to make good constructive songs', 'how to put the structure of music together' and 'learning how to structure a song'. As we shall see in the analysis of the musical outcomes, pupils easily grasped the concept of structure. Moreover, as we have already mentioned, the visual aspects of GarageBand made 'seeing' as well as hearing structures easy. This allowed the learner to spot mistakes, as in:

> Yeh, I've learnt you know like for the beats and the chorus and you've got to get everything right. Like one small thing can make everything go wrong (Alexandra, pupil, School 2)

Out of the structure came notions of contrast, what one pupil described as 'what's meant to be different'. Another pupil developed this idea of contrast as in:

> You are learning how verses and choruses are different. How with the verse you have a different mmm... like you have a different type and you change it. In a verse you would change the... eh.... the words and that. In the chorus they sing. (Polly, pupil, School 2)

Others were aware of the phrase lengths that were an essential part of the structures, as in: 'I've learnt that there are eight bars (Joseph, pupil, School 1)' and 'I'm learning that there are a certain amount of bars that you have to put in' (Lucy, pupil, School 2)

There were many examples of the 'learning' going beyond the mechanical placement of blocks on a grid. The given structural pattern was often introduced or appended by musical and extra musical intros and outros. In addition, for some pupils, the principles of structuring music came as a genuine insight as the next exchange demonstrates:

> WC: Did you know how raps were put together before you started the project?
>
> Emma (pupil, School 2): No. I had no idea. I just sort of thought they were 'there'. I thought people just played music. I didn't know you had to do all that to put it together and then record it.

However, not all the pupils demonstrated this spirit of insight. One pupil confused the musical term with its practical application. He claimed he was

learning: ' certain types of term that will help you in music, like binary[29]' (Jamal, pupil, School 3). Another pupil struggled to define the term, saying: 'two pieces of music I think' (Tosin, pupil, School 3). We can see that both these responses came from School 3 where the link with structure was somewhat tenuous. Clearly the pitfalls of introducing abstract concepts into this sort of learning environment still exist and need to be carefully considered. Nevertheless, it was overwhelmingly clear that pupils were learning an amount about musical structure. As one teacher respondent said:

> One of the most important things they're learning, it's not really about instrumental skills, it's more about the structure of music, how to put the music together. (N, male, teacher, School 1)

The three classroom projects focused on 'instruments' in different ways and this coloured the pupils' views of what they were learning. For example, in School 1 the focus was quite clearly on the 'instruments of the orchestra'. Hence there was the information relating to the 'category' that the instrument belonged to as in 'knowing all the four families'. But the (teacher's) imposition of orchestral groupings of the European tradition led to confusions in relation to instruments drawn from other genres. Hence, pupils talked of learning, 'you know "world instruments", like the four families' and 'yeh, like "deep synth" and many more'. In School 2, who were contrasting verse and chorus, the instruments became associated with their musical content as in: '...some of the different drums to use in choruses and verses....'(Hannah, pupil, School 2).

The research suggests that this led to a deeper understanding of instrumental characteristics related to how the instrument sounded and 'how they play'. As one respondent said:

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[29] Binary form is a term used to describe a simple two part structure usually found in the Renaissance and Baroque periods of 'classical' music.

> I learn, like, what the different type of instrument there is. So if I don't know an instrument, you listen to it and kinda get the feel of what type of instrument it is like...if it's a drum or something... (Mark, pupil, School 1)

In this context of active listening pupils could begin to make real musical decisions including the one that: ' not all instruments go together' (Karen, pupil, School 2). The closeness to actual instrumental sounds, the authenticity of the sounds, was also important. For example, one of the teachers stated that, 'they're learning about the sounds... they're learning what they actually sound like, and for a lot of sounds, that's not easy to actually show without something like GarageBand' (N, male, teacher). This was echoed by a pupil, who said: We're learning what instruments do... and how they play' (Joseph, pupil, School 1). However, while the musical 'content' carried by the sounds was alluded to, the exploration of genre, style, and idiom remained relatively unexplored, even in School 3 where the music had to track a video clip of opposing musical styles.

While areas of learning dealing with structure and instruments are not new to the Key Stage 3 music curriculum, the concept of mixing is. Interestingly this does not fall into the areas of learning outlined in the National Curriculum. As we have seen, these are generally aligned to developing an understanding of the predominantly notated elements within performance contexts. In all the classroom projects some type of mixing was observed. However, it was not always taught. Often it involved the notion of assembly as in: 'just to see what sounds right and putting them together ... and just to see how they sound when you mix them' (Jessica, pupil, School 2). One pupil found that exploring disparate elements that went to make a track resulted in a new appreciation of the creative process when she said:

> I thought in normal songs there is just like one beat and somebody's doing [something] over it. But there is actually loads of different elements of instruments. All different basses put together to make it just one track or something. (Hannah, pupil, School 2)

The balance between the different instrumental tracks was also mentioned. For example, one pupil was listening to: 'the different volumes of music' (Sarah, pupil, School 2). The balance needed to be addressed because on occasion pupils couldn't hear new layers as they were added. For example:

> Lottie (pupil, School 2): If you have the really loud guitars and stuff and then you have like shakers and triangles going along...
>
> WC: You couldn't hear them?
>
> Lottie, pupil: Yes

Some of the more advanced aspects of mixing, for example using the stereo field, effects and real time control of volumes were not covered by these projects. However, in a number of instances pupils were observed using them and one pupil referred to it in the following response when she said:

> Well I quite like doing remixing. Like taking different parts of different songs and putting them together and adding sound effects. I quite like doing that. (Alexandra, pupil, School 2)

Closely aligned to learning about mixing was the learning associated with the technology. This did not always feature in the teachers' planned learning outcomes although it could be seen on occasion[30]. Teachers 'taught' the technology through modelling to the whole class – all the schools had linked

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[30] For example, School 2 taught drum programming

interactive boards – or on a one-to-one basis as they went round the class. There were many aspects of technological handling that emerged as the pupils engaged with the materials. Hence from a class teacher's perspective in School 2 there was: 'that element of how music technology 'works'. They were learning how to use the programme' (C, female, teacher, School 2). The pupils were therefore learning: 'how to use the technical side of things...' such as 'how to loop' and use 'shortcuts'. It was a process generally driven by the need to develop the music and was not always planned as is suggested in the following exchange:

> Peter (pupil, School 3): He [the teacher] first started teaching us GarageBand like, starting off and everything...
>
> WC: So he was teaching you how to use it...
>
> Peter: Yeh. And then after that he started teaching us how you can like split anything when you don't like it when you do it on the keyboard. How to put lyrics into it. And how to do loops and all that.

The role of the teacher in designing learning strategies in relation to the technology will be discussed in Chapter 6. However, it is clear that the pupils were developing aspects of independent learning which were driven by their musical exploration and curiosity both inside and outside of the classroom. As one pupil commented:

> Well every time I use it I am learning different things. Like, although I have the same computer [at home] I am learning how to use different things like when I want it to play I learn how to use the keyboard to make it work without using the mouse and everything. (Elle, pupil, School 2)

The learning involved in putting sound to vision was confined to School 3. At its best it motivated to make real musical choices within a recognisable context as in:

> .... when you look at video on TV and everything like that you look where the beat goes and you're doing it yourself. Looking at the video helps me to see if the beat actually goes with the music. (Miriam, pupil, School 3)

Hence a key element of the learning was the ability to 'synchronise' the sounds to the film, as in: 'to make music go with the video...synchronised, yeh...' (Tosin, pupil, School 3). This involved adding a specific sound clip to a specific event or bringing in the drums when they appeared to play on the film. Another pupil spoke of adding 'humour' in relation to the film clip. In a few interviews pupils had difficulty remembering the musical terms that had been taught – what one pupil called 'lots of musical words' – but they nevertheless were able to apply the principles in their musical interactions.

3.6.1.2 – Unintended learning

Beyond the learning implied in the schemes of work it was possible to observe a collection of 'unintended' or complementary learning. The most important area here was the link to rhythmic understanding, what one teacher called: 'the pulse', 'the length of the bar and then the length of the phrase'. This was well expressed by a pupil respondent who stated:

> Well I've learnt that for the song to sound completely right it has to be right on the beat. It can't be like 'off' beat at all. Otherwise it won't fit. Like, we just had a situation there with the intro and some of them sounded off beat and it sounded weird. So it teaches you like you are more aware of the counting. (Hannah, pupil, School 2)

More importantly there was the sense that potential rhythmic skills were being developed, what one teacher referred to as 'something about internalising'. This rhythmic response was apparent in observations where pupils would be seen to move, sway and tap as their pieces played back. As one pupil stated: 'you are using your hearing to feel the beats...' (Karen, pupil) One teacher linked this aural link to rhythm with the spatial presentation of the screen and suggested a link with notational understanding when he stated:

> It's the same kind of thing where the bars are evenly spaced and it's all justified, isn't it? So a two beat note takes up twice the space of a one beat note. So I don't know if it has any knock on effect on notation. (N, male, teacher, School 1)

Another area, which will be discussed in more detail through the analysis of the pupils' outcomes, was the role of genre and the fusing of styles. One teacher suggested that, 'it caters quite easily for genre'. However, as pointed out elsewhere, the choice of genres is dependent on the range of loops available to the pupils. In its basic form GarageBand tends to favour contemporary dance based styles. However, if other 'Jam Packs' are added the choice can be expanded to include a range of world and western classical musics. Perhaps this is what a pupil meant when he said that: 'we...just make a piece by mixing different musics together' (Kevin, pupil, School 1). The ability to create musical fusions was certainly apparent in the pupils' work and, while not taught, one teacher confirmed that: 'you know it does fuse' (Y, male, teacher, School 3)

3.6.1.3 – Learning to work together

We have already noted that some respondents thought performance skills and the learning of musical notation was missing from the pupils' learning. So too

were ensemble skills and the implied range of life and communication skills that are supposedly developed through this type of work[31]. For the most part pupils worked in pairs and the research suggests that pupils overwhelmingly valued working this way of working. For example, one pupil stated that: ' I think it is better to work with another person 'cause then you can get our ideas and her ideas and merge them together' while another agreed that: ' I like working with a partner...he might find something, use something, that I didn't know about'. Reasons for working in pairs revolved around the idea of balancing and informing individual choices, for example:

> When you work on your own you kinda like what you do. But when you work with someone else you get two opinions to actually balance it to know if it is actually really good for other people to hear, like more than one opinion. And then you just develop your ideas and make the work really good. (Omalarie, pupil, School 3)

Another pupil suggested: 'It was easier. Ideas coming from two different ways. Like two heads are better than one'. There was also a suggestion that pupils took on roles within the pair as in: 'My partner does all the technical stuff'. But overall the emphasis was on working together in a communicative and productive way. As one teacher said:

> I think that pair work really works well because it allows the exchange of ideas ... they are communicating about music amongst themselves using... their own language. (W, male, beginning teacher, School 1)

Pair work was felt by some to be better than the larger grouping used in ensemble work, for example:

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[31] See Chapter 4 for a fuller discussion of this 'outcome' of creativity

When we was doing it in groups last time everybody wanted to do the same thing. But, in this, because it is just you and your partner, then you can just compromise. And so in the end you end up making a really good piece. Whereas, 'cause we was working with everybody else playing the music it didn't end up as good as it would have if it was just two of us... (Elle, pupil, School 2)

As previously discussed there was evidence to suggest a number of problematic issues with larger ensemble groupings. Even when the 'pair' increased to a three there were issues of group dynamic which could result in loss of control and status. Consider the following exchange:

Peter (pupil, School 1): If you are kind of in a two then you can – I don't know how to say this – but it's kind of easier than when you're in a three because if you want something the other two might not want it so you'd be voted out two to one. But if you are in a group of two the other person will have to like it or they just leave (it?) which is kind of...

WC: So in a two you can negotiate?

Peter: Then with the third person there you have to...okay, he's used his, you've used yours, now this is mine to use but then the third person might not like it so then they might vote against it.

As noted in the previous chapter, the research suggests that working with GarageBand naturally lends itself to pair work. The discussion surrounding the choice and assembly of loops is easily articulated in the context of a one-to-one discussion. At its best roles can be shared, interactions can occur and individuals can make valid choices which are endorsed by their partner. There was little evidence of antagonistic behaviour when pupils worked in paired groupings. On

the other hand larger groupings are not feasible in terms of visual and technical access to the programme's features. As one teacher admitted: 'I think they quite like just working in twos rather than bigger groups'(C, female, teacher, School 2).

3.6.2 – Summary: learning and the new technology

This section has considered some of the learning that took place during the GarageBand sessions. It has not looked at the creative aspects of the learning which, as we shall see in the next chapter, is a problematic and contentious area. The learning explored here has clear links to the National Curriculum. Areas such as 'structure' and 'instruments' can be part of the arid unpicking of music encouraged by the document's emphasis on musical elements and devices. This ignores the holistic and spontaneous nature of music. The divisions of musical learning suggested by Philpott (2007) are also apparent in the research. Skills relating to the control of the technology and the development of rhythmic understanding are evident. So too is the knowing of music by direct experience.

It cannot be assumed that GarageBand will always promote learning. There are issues relating to the teachers' role in the design and delivery of materials, the tensions and links between the formal and informal learning contexts and the technology's ability to sustain pupil motivation and refine musical response. However, the research suggests that GarageBand can enliven pupil interaction by bringing into being music which results from the construction of various elements into a recognisable whole. In doing so I sense it has taken them a little closer to Swanwick's unfashionable 'magic of music'.

3.7 – Conclusion

This chapter has argued that many of the assumptions at the heart of the National Curriculum: Music at Key Stage 3 document (QCA, 2007) are problematic. The main area of contention is the belief that we can only be seen to be musical through musical performance and performance based composition. Unfortunately the dominance of musical performance at Key Stage 3 has made it difficult for a large number of pupils to access music making in our schools. We have seen that areas linked to musical performance, in particular music notation, have also distanced and excluded many pupils. Here, cultural and socio/economic factors 'exclude', and sets of the hidden values 'distance'.

The new technology cannot meet the current requirements of the National Curriculum in the area of performance. Nor would it serve pupils at GCSE. However, it does offer the non-performing musician – that is, the listener who actively engages with music – a range of ways in which they can make music in real time. It offers new ways of seeing music happen. It also affords the listener agency and ownership in the creation of music that is relevant to their musical and communicative lives.

The research has also demonstrated that pupils acquire some skills and knowledge, which do fit with the National Curriculum, when they interact with the new technology. For example, conceptual understanding of how music works is facilitated by the audio and visual interface of the software. However, what pupils will learn in relation to the technology is still an area that needs some consideration. Simply teaching the old warhorses of curriculums past – for example, structural form and 'instruments' – may not be appropriate in the new technologically mediated contexts. How teachers design and deliver such learning also needs consideration.

However, for the actions involving the new technology to be accredited with the value and the status that is accorded to the performing musician, the music curriculum needs to change[32]. This is not to denigrate performing musicians or eradicate their type of musicianship from the curriculum. It is to acknowledge other types of music making – music making which may allow all our pupils to access music in our schools.

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[32] This is discussed in Chapter 6

Chapter 4: Creativity, music education and the new technology

4.1 – Introduction

Having considered performing and listening, along with their links to music notation, we now turn to creativity. Hence the research questions addressed in this chapter are:

> In what way does the new technology promote musical creativity? How do teachers conceive of creativity in the music curriculum? How do creative approaches influence and mediate teachers' actions and pupils' learning? In what way can interactions that make use of ready-made musical materials be said to be creative? Do the participants feel they have creative choices and creative control over these materials? Do the pupils relate to, and feel ownership of, the musical outcomes?

Creativity has been mainly conceptualised in music education as 'composing'. The National Curriculum includes it as a key process which places it in the famous triumvirate of 'performing, composing and listening' (QCA, 2007: 182). Granted the document attempts to articulate the process through a number of activities as in, 'create, develop and extend musical ideas' (ibid.). However, the link with the 'composer' is made. As we shall see below this leads to a number of conceptual issues for music teachers. There is also a link to being creative 'when performing' in the document. However, much of the creativity that goes on in music classrooms somewhat ignores the role of instrumental skill in the creative process. How are pupils to create and develop music if they cannot play an instrument? This has led to pedagogies based around 'exploring' and

'discovering' sounds' (Paynter and Aston, 1970). Moreover, the context for these creative explorations have been at odds with the common culture of the pupils (Willis, 1990). As we have seen currently emerging pedagogies address the relevant contextual and cultural areas previously missing from school music (Green, 2008). However, in school based practice they often emphasise the 're-creation' of music which still relies on the acquisition of instrumental skills.

Sections of this chapter will seek to interrogate if pupils, by interacting with the new technology, may be considered to be creative. However, how one interprets their actions very much depends on what one means by being creative. As I discuss below, creativity is a contested area which is delineated in a number of rhetorical positions (Banaji, Burn and Buckingham, 2006) . In particular, teachers need to consider what they mean when they talk about creativity in an arts subject such as music. The same ghosts that stalk the music curriculum's relationship to performance also inhabit perceptions relating to creativity. There is also a set of issues relating to creativity's relationship to learning. As Craft enquires below, what is the difference between 'creative learning' and 'effective learning'? (Craft, 2005)

This is one of the areas probed in this chapter which investigates the perceptions of the group of beginning teachers, as discussed earlier in the methods section, in relation to creativity and their initial teaching experiences. The research suggests that there are a number of contradictions and confusions in relation to the training teacher's previous experience and their perceptions of creativity in the classroom. The research also considers the new teacher's own creativity and how that sits in relation to their work with pupils. The findings feed into one of the issues to be discussed in Chapter 6: that of the role of the teacher and the pedagogies that may be adopted in relation to creativity and the new technology.

The fact that the creative tools normally available to music teachers require performance skills may colour the way teachers conceptualise creativity. Hence, this chapter's concluding focus is on the creative affordances of the new technology. This probes the perceptions of pupils and teachers with regard to the degree of creative ownership they feel in relation to the music they are making with GarageBand. The fact that the source of the music making pre-exists, as ready-made loops of sounds, is important. In what way does this support or detract from creative expression in the view of the pupils and the teachers? In what way might it challenge notions of expression, authorship and originality? The research suggests that many pupils are quite easy with notions of reuse, borrowing and sharing, and it reminds us that they inhabit technologically mediated contexts where such actions are commonplace (Vakeva, 2010). However, issues of control and authorship still exist for some. Moreover, the role of the teacher in guiding and supporting the pupils in such creative contexts leads us back to considerations of role and pedagogy. Another challenge posed for teachers and pupils alike is how the processes and outcomes of this type of creativity might be 'valued' and assessed. This latter point is fully discussed in Chapter 5.

4.2 – The nature and meaning of creativity

It is hard to avoid the term creativity. It is one of the most used and abused of terms - at one moment invoked to praise a specific technical skill, at another uttered in the most vague and casual manner. In any newspaper or magazine we pick up, we are able to read about the creative work of film directors, actresses, novelists, musicians, singers and all manner of celebrities. Now a staple byword of the discourse of advertising, we're told about creative promotions and campaigns, and about the personnel awarded for their creative contributions to the industry. The term is used by teachers in their encouragement of children to express themselves, expand and grow, and by management consultants

> seeking to stimulate lateral thinking at work with the aim of improving company profitability. (Negus and Pickering, 2004: vi)

As Negus and Pickering point out, the term 'creativity' means many things to many people. For those working in music education and the arts the nature and meaning of creativity is of special importance. It appears inextricably linked with the subject area. Yet it remains unclear what teachers expect pupils to learn when they engage in creativity. Similarly, they are unsure how they might value creative actions and outcomes and how those actions and outcomes might sit with notions of creativity in the wider social and cultural context.

4.2.1 – Creativity in education

In education the arts subjects have always promoted creativity as a valuable part of their subject's potential value. As early as 1923 a report considering the organisation and suitability of the school curriculum stated that the arts 'stimulated the growth of the imaginative, critical, and creative faculties' (quoted in Metcalfe, 1987). While this did not lead to a creative and practical arts curriculum it did acknowledge that, somehow, schoolwork could include a creative response. However, it was not until later that creativity as a force in education received a decisive boost in the form of the Plowden report. As Craft has argued: 'the first wave of creativity in education can be seen to have been in the 1960s, codified by the Plowden report but drawing on a long line of child centred policy, philosophy and practice' (Craft, 2005: 10).

For some this was not always seen as a positive benefit. Eisner argues that there has been a tendency in the 20th century to romanticise creative work by children and that this influenced the growth of progressive education in the 1960s (Eisner, 1985). Sefton-Green suggests that, as a consequence of this, 'arts

activities are viewed by some vocational and academic commentators as sloppy, sentimental, unmeasurable and self indulgent, lacking rigour and relevance' (Sefton-Green, 2000: 8-9).

This can be seen in the exploration of creativity in education in the 1970s which was closely linked to modernism in the arts and the continuing progressive movement in education (Abbs, 1987). Eisner points to the discourse of 'self-expression' that permeated the view of creative activities at this time. He suggests that, in this context, it became increasingly unclear whether teachers were evaluating the makers or their products (Eisner, 1985). The Arts in Schools project – which sought to bolster the position of the arts in English education against an increasingly employment based focus – agreed that there were dangers in this type of free self-expression. The report asserted that: 'creativity is something which requires discipline, previous experience and a firm grounding in knowledge' (Robinson, 1982: 29). Furthermore, this approach acknowledged, perhaps for the first time, that creative education could also serve the needs of the market place. It stated that:

> Industrialists and politicians lay great stress and invest much energy, time and money in the promotion of creative work and creative thinking. These can and should be promoted throughout the whole curriculum.
> (Robinson, 1982: 29)

These ideas were further developed in the report: *All Our Futures: Creativity, Culture and Education* (NACCCE, 1999). This report was important because of its attempt to redefine creative and cultural education. In particular it focused on the importance of creativity in teaching and learning in relation to the challenge that faced education in the twenty-first century. Its definition of creative education was broad, stating that it means: 'forms of education that develop young people's capacities for original ideas and action' (Rogers, 2000:

4). But within this broad definition the report acknowledged that the word 'creativity' is 'used in different ways, in different contexts. It has an elusive definition' (NACCCE, 1999: 28). The report's own definition took account of the 'sectoral' which only associates creativity with the arts. It was also aware of an 'elite definition' of creativity with its assumptions of genius, innovation and virtuosity. In fact the report appeared to accept some sort of hierarchy within 'creativity' stating that:

> The elite conception of creativity is important because it focuses attention on creative achievements which are of historical originality, which push back the frontiers of human knowledge and understanding. These achievements constitute the highest levels of creativity. (NACCCE, 1999: 29)

As a counterweight to this, the report posited a 'democratic definition' which asserted that 'all people are capable of creative achievement in some area of activity' (ibid.29). Banaji et al. refer to this part of the report as involving the rhetoric of creativity as a social good (Banaji, Burn and Buckingham, 2006). It focuses on the social and personal development of young people in communities and other social settings and encompasses areas such as anti-racism, multiculturalism, drug use, alcoholism and other social problems. Buckingham and Jones question the report's celebratory and simplistic view of culture (Buckingham and Jones, 2001). They point out that creativity could be seen as some magic potion for ironing out society's inequalities.

In other parts of the report it is worth noting that the view of creativity is coloured by reference to the arts as formulated by the European tradition – that is, the rhetoric of 'creative genius'. This is apparent in the report's own definition of creativity which consists of four elements:

- thinking and behaving *imaginatively*
- this imaginative activity is *purposeful*
- these processes must generate something *original*
- the outcome must be of *value* (NACCCE, 1999: 30)

These characteristics can be seen to chime with commentators, such as Scruton, who fear and dislike the more democratic versions of creativity. His views enshrine the notion that there has been a loss of balance, tradition, skill and insight in modern versions of creativity and a steady decline in educational standards (Scruton, 1987). While not endorsing this view, Banaji et al. are nevertheless aware that:

> ....while it appears that the rhetoric used in the NACCCE report supports democratic notions of creativity, and encourages an appreciation of cultural difference, many of its promises about the benefits of creative education betray elements of more elitist and romantic notions of artistic endeavour. (Banaji, Burn and Buckingham, 2006: 29)

4.2.2 – Confusions surrounding creativity in education

The above quote points to one of the central contradictions regarding creativity: namely the notion of the creative genius, which is the province of a few gifted individuals, set against the idea of a ubiquitous or democratic creativity, available to all. However, there are many other contradictions, confusions and tensions regarding creativity in education. In their recent survey of the field Banaji et al. develop the basic premise of 'the notion of the idea of creativity as a series of rhetorics' (Banaji, Burn and Buckingham, 2006). By using this approach they suggest that 'creativity' is linked to a series of constructions, formulated by a range of commentators, who seek to persuade us of its true meaning. The authors are able to distinguish ten rhetorics. These are:

Creative Genius Rhetoric – rooted in the European Enlightenment, this post-Romantic perspective emphasises extraordinary creativity

Democratic and Political Rhetoric – rooted in the Romantic era this perspective sees creativity as offering empowerment

Ubiquitous Creativity - which sees creativity as pervasive

Creativity as a Social Good – emphasizing inclusion, multiculturalism, and creativity seen as necessary to 'a good life'

Creativity as Economic Imperative – drawing on neo-liberal discourse around the capitalist economy

Play and Creativity – with roots in Romantic thought, which sees childhood play as the origin of adult creativity

Creativity and Cognition – emphasising cognitive processing with links to Piagetian and Vygotskian approaches

The Creative Affordances of Technology - which emphasise the possibilities that the new technology offer in relation to creativity

The Creative Classroom – a discourse that draws connections between individual and collective creativity in the classroom

Inevitably the literature the authors review at times demonstrates that the range of rhetorics can share the same ideological stage, overlap or arise out of the same genesis. But their analysis is helpful in clarifying the way the constructions work and for assisting educators and practitioners to locate themselves in relation to the term. While not all the rhetorics are relevant to this review, a number emerge as particularly pertinent to the new music technology and creativity.

In addition to the rhetorics Banaji et al. detail a number of themes which cross-cut the main categories. These are posed as a series of questions that ask: whether creativity is an internal cognitive function or an external cultural phenomenon; whether it is a ubiquitous human activity or a special faculty; whether it is inevitably 'pro-social' or can be dissident or even 'anti-social'; and what are the implications for a creative model of teaching and learning? (Banaji, Burn and Buckingham, 2006: 60)

These questions remain unanswered but are important for the framing of future work in the field. As they conclude: 'how the rhetorics might be deployed, transformed, reacted against, replaced by educators and artists working with children – and by the children themselves – may be the most interesting question of all' (ibid.55).

A central conundrum regarding creativity is its position in relation to personal development and expression as opposed to the needs of the market place and the world of work. For example, the 2005 National Curriculum Handbook – a governmental guide to all subjects taught in the curriculum in England – provides a definition of creativity which links the rhetoric of 'ubiquitous creativity' with that of the rhetoric of 'creativity as an economic imperative' when it states:

> By providing rich and varied contexts for pupils to acquire, develop and apply a broad range of knowledge, understanding and skills, the curriculum should enable pupils to **think creatively and critically, to solve problems and to make a difference for the better.** It should give them the opportunity to become **creative, innovative, enterprising** and capable of leadership to equip them for their future lives as workers and citizens (*their emphasis*) (DFES, 2005: 11-12).

In this statement the meaning of the term blurs into broad notions of effective thinking, problem solving, citizenship and the world of work. It is unclear what being 'creative' might mean in this context.

Craft, aware of this sort of confusion, has closely scrutinised the tensions and dilemmas inherent in its use in the educational context. Her work on creativity initially focused on the primary classroom and explored the rhetoric of creativity as 'ubiquitous' in the 'creative classroom'. Hence it took an inclusive approach which suggested that everyone has the potential for creativity and that it is a fundamental aspect of human nature (Craft, 2000). However, in later work – aware of the increasing use of the concept of creativity as an economic imperative – she questions its status as a 'good thing' (Craft, 2005). Probing the social context of creativity she pointed to its placement in western liberal individualism which, in turn, is closely linked to the market place. She argues that not all cultural groups will subscribe to this notion of creativity and that they may bring a different perspective to the creative discourse. She also points out that social class based assumptions – for example, deferred gratification, self-reliance, control over one's environment and so on - are inherent in the European culturally located concept of creativity. As she points out:

> the so-called 'universalised' concept of creativity... sits uneasily with the power, authority and control implied by imposing a creativity value set in the classroom which does not connect easily with some pupils' experience and understanding of how the world works (Craft, 2005: 97).

It reminds us that who decides which creative outcomes are valuable or which social groups are allowed to take part is an important issue. As Bourdieu suggests, this decision making, this codification of what are deemed valuable cultural outcomes, is accorded by those who have cultural capital. (Bourdieu, 1984)

A further blurring of the term relates to the substantial body of research into creativity which locates itself within a broadly cognitive tradition. This asks 'questions about the links between creativity and the workings of the mind.' (Banaji, Burn and Buckingham, 2006: 39) For example, Howard Gardner's work on multiple intelligences has had some bearing on educationalists' understanding of creativity. His work broadens the concept of intelligence to include a series of intelligences - linguistic, logical-mathematical, musical, bodily-kinesthetic, spatial, interpersonal, intrapersonal – which enables educationalists to value and target a wide range of 'talents'. Gardner argues that:

> A human intellectual competence must entail a set of skills of problem solving, enabling an individual to solve genuine problems or difficulties that he or she encounters, and when appropriate to create an effective product. (Gardner, 1993: 60)

As Banaji et al. point out: 'This definition, which is of 'human intellectual competence', and not specifically of creativity, is at the root of many current definitions of creativity, including the widely used NACCCE definition'. (Banaji, Burn and Buckingham, 2006: 42-3)

If creativity is to be more than a broad transferable skill which serves the world of work then teachers have to ask themselves what is being 'learned' when pupils are creative. As we shall discover below, the study of PGCE music trainees suggests that there appears to be an emerging 'learning divide' which views creativity as fostering either musical understanding and skills or more generic life and social skills. This latter area was seen to be more important by the respondents and included broad notions of collaborating and communicating with others and the articulation of self-expression. For Craft the position of

subject specific knowledge within the creative context could be overlooked or omitted. As she asks:

> What does this (the creative discourse) mean for the role of knowledge? If creativity is not domain specific, but a transferable skill, then where is the knowledge base on which it draws?' (Craft, 2005: 36)

While teachers often see creativity as universally 'good', they also perceive that pupils can feel vulnerable in certain musically creative contexts – either due to lack of skills, understanding, support, poor resources or the nature of the creative context. One of the main interrogations of the GarageBand research was to ascertain if the 'creative affordances of technology' can enable pupils to achieve valued outcomes – in terms of teachers' and pupils' perceptions – while bypassing traditional musical skills and understanding. As Banaji et al. state 'if creativity is not inherent in human mental powers and is, in fact, social and situational, then technological developments may well be linked to advances in the creativity of individual users' (Banaji, Burn and Buckingham, 2006: 58). Loveless agrees and maintains that digital technologies open up new and valid ways of being creative, pointing to features such as provisionality, interactivity, capacity, range, speed and automatic functions which enable creativity to occur (Loveless, 2003). In a similar vein, Buckingham suggests that technological developments have made more complex forms of practical production much more accessible and easy to manage and that the use of digital technologies has potentially significant consequences in terms of students' learning (Buckingham, 2003).

However, there are a number of issues relating to the democratic potential and distribution of digital creativity across the school curriculum. Sefton-Green notes that the successful projects described are all heavily intensive in terms of time, staff and resources (Sefton-Green, 1999). This is also

borne out by the research (see Chapter 2). Here, despite the enthusiasm generated, the organisation of the school day with its narrow subject disciplines, short working periods, and heavy assessment load are seen as inhibiting the success of creative work in the digital sphere (or, for that matter, any sphere). As already discussed, Buckingham suggests that we should be wary of accepting the technology as merely a neutral benefit. He reminds us that the 'digitising' of audio, visual and print "texts" is part of a broader convergence of media and as such is driven by a much more general move toward a market led media system, in which the maximizing of profit takes precedence over public service imperatives (Buckingham, 2003). While there appears to be an increasing democratisation of engagement and access through digital communication there is also a growing concentration - in the grip of a few global multimedia corporations - of the ownership of digital outlets. The sale of the 'MySpace' website– a site that allows listeners and 'unpublished' performers to share their music – to the Murdoch multimedia conglomerate is a recent example of this trend (Scott-Joynt, 2005).

If creativity is worth considering in education then some attempt to recognise and understand its complexity needs to be made. This should acknowledge its various potential benefits and dangers within an educational context. As Negus and Pickering point out 'its conceptual status is frequently taken as an unquestioned commonplace' (Negus and Pickering, 2004: vi). However, its value and significance for music teachers need to be constantly revisited and clarified if it is to serve the pupils in their experiential engagement with music. It may mean many things to many people but for Negus and Pickering:

> Creativity is a process which brings experience into meaning and significance, and helps it attain communicative value (Negus and Pickering, 2004: vii).

4.3 – Creativity in the music curriculum

Creativity in music education might be judged to occur in a number of contexts. For example, performing and listening might be seen to involve some sort of creative input and response. However, it is musical composition and the processes associated with it – for example, the exploration of musical elements or musical improvisation – which most people associate with creativity in music. It is the nature of creative 'composition' and its processes and products that are the focus of this research.

The European tradition still exerts a powerful influence on the thinking of music teachers in relation to composing in the classroom. Indeed Cook has outlined how the European 'critical' tradition has formed the basis of our current school music curriculum and lies embedded in our music conservatoire and university courses. As he points out, the National Curriculum's attempt to place 'composing' in the hands of ordinary mortals (pupils) 'is not well served by the ways of thinking about music which we have inherited from the age of Beethoven' and his legacy (Cook, 1998: 28).

What Cook terms 'the cult of Beethoven' emphasises a number of attributes including the notion of the original and challenging work, musical virtuosity and the concept of the individual author. Other commentators (Battersby, 1989; Goehr, 1992; Citron, 2000) have described how the canon of musical works was created in relation to gendered concepts of the original discrete work and the musical genius. This reification of music in the Western tradition led to the development of an 'aesthetic', and the social processes associated with it, which canonised certain types of music above others. A number of commentators (Elliott, 1995; Spruce, 2001) have argued that this focus on reified aesthetics has skewed our response to music as participants and

has often resulted in an engagement with what Said has called 'mystical and disinfected subject matter' (Said, 1983: 3-4).

Notions of 'high' culture have also left us with problems of perception in relation to so called 'low' cultural forms. Adorno, with his emphasis on the individual creative artist who confronts the power of industry and capital, saw popular forms of music as inferior. In his view popular music suffered from 'standardisation', where:

> The whole structure .... is standardized, even where the attempt is made to circumvent standardisation. Standardisation extends from the most general features to the most specific ones. Best known is the rule that the chorus consists of thirty two bars and that the range is limited to one octave and one note (Adorno, 1941: para.3).

In his defence, Middleton asserts that Adorno's scathing polemic against popular music is 'striking in its richness and complexity...demanding to be examined from a variety of viewpoints, notably that of music production...musical form and that of musical reception and function' (Middleton, 1990: 34). He also reminds us that Adorno's historical context was that of the 1930s where capitalism and fascism were in the ascendant and the left was in retreat. Nevertheless, Adorno's view remains historically fixed and pessimistic in relation to popular music. It does not account for the diversity and innovation of the popular culture that was to follow (see, for example:Frith, 1996).

Adorno's views on legitimacy and value still permeate the assumptions of some of today's musicians. We have seen previously how Julian Lloyd Webber was shocked by the absence of traditional music notation in the music curriculum. He has also, more broadly, bemoaned the 'lack of music in schools'.

He means, of course, 'classical music'. Responding to a survey carried out by Classic FM in 2002 he felt outraged 'that a large percentage of British schoolchildren could not name a single classical composer' (Webber, 2005). However, most of those same schoolchildren would have had a detailed knowledge, and engagement with, popular forms of music. As Negus and Pickering point out:

> Rather than seeing popular forms as inferior because they are so much part of everyday life, we need to see 'high' cultural aesthetics as deficient when their connections with the everyday are denied. What counts with any cultural product or performance is not how it is aesthetically ranked, but how it runs its course to fulfilment (Negus and Pickering, 2004: 44) .

Ways of thinking about musical creativity were refreshed in the 1970s with the child centred approaches promoted by Schafer (1976) and Paynter (Paynter and Aston, 1970). What became known as the 'creative music movement' rejected the classical canon but were closely allied to the post-war experimental music of a continuing European tradition. Paynter and Aston in their book *Sound and Silence* proclaimed: 'it is as a creative art that music is beginning to play an increasingly important role in education' (Paynter and Aston, 1970: 3). The call to creativity was in essence a romantic one which promoted individual self-expression, freedom and the opportunity to innovate. Their response to the question 'What is creative music?' is expressed in the following terms:

> First of all, it is a way of saying things that are personal to the individual. It also implies the freedom to explore chosen materials. As far as possible this work should not be controlled by a teacher. (Paynter and Aston, 1970: 7)

The impact of this philosophy on the classroom was quite substantial and led to a seeming revolution in curriculum music. However, a number of commentators (Swanwick, 1988; Cox, 2001; Odam, 2002) suggested that this articulation of musical freedom was all too often framed in terms which appeared random, unstructured and musically unrecognisable. Moreover, it ignored the musical lives of the pupils. As Green points out:

> There was a crucial aspect in which it fell short of being child-centred. For rather than starting with music that pupils were familiar with and enjoyed, it introduced them, through compositional stimuli and other means, to musical styles that they would be unlikely ever to come across in the world outside school. This mainly focused not so much on mainstream classical music as on atonal or other modernist twentieth-century music of many varieties (Green, 2008: 11/12).

The alternative traditions of world and popular music espoused by Vuillamy and others in the 1980s (Vulliamy and Lee, 1982), and continued into the present day, attempted to inject relevance and structure into creative work while attempting to broaden its stylistic basis. The introduction of 'alternative traditions' was a 'wide-ranging and problematic hybrid' (Swanwick, 1988) which emphasised non-literate performance and improvisation scenarios. Moreover, it posed many problems for music teachers who were from a traditional performance background. This in turn coloured their choice of what "types" of popular and world music to include in the curriculum. As Green points out:

> Although the newer musical curriculum appears to challenge the previously narrow selection of music from a mainly white middle-class culture, the *values* which accompany it do not necessarily do so; the musical identities of most pupils continue in many cases to be distanced (Green, 2008: 13 author's italics).

These values coloured the advent of "composition" as a discrete area of musical learning – which became a part of the GCSE syllabus in the mid 1980s and found its way into the National Curriculum in the 1990s. Since then approaches to composition in the classroom have become time limited and topic based, revolving around 'areas of study' relating to classical, popular and world musics (EdExcel, 2006b). This approach has been further emphasised by influential classroom resource materials (Hiscock and Metcalfe, 1998) and a recent refocusing of the curriculum in England for the 11 to 14 age range known as Key Stage 3 (QCA, 2007).

As we have seen in Chapter 3 practical creative work in the classroom still appears to be hampered by the music teacher's musical identity and previous musical training. Resourcing issues, class size and time limitations – typically one hour a week at Key Stage 3 – further compound the attempt to promote creativity. The pupils for their part often lack motivation, the necessary skills or the conceptual understanding. In fact a number of commentators (Green, 2001; Slodoba, 2001; MacDonald, Hargreaves and Miell, 2002) have suggested that pupils feel a dichotomy between 'school music' and 'out of school music', which in turn can lead to the perception that creative work in the classroom lacks authenticity and relevance. As Slodoba states:

> Classroom music, as currently conceptualised and organised, may be an inappropriate vehicle for mass music education in 21st century Britain. Hints of effective parameters of a more effective music education environment may well be found within the somewhat anarchic mixed economy of out-of-school provision in this country (Slodoba, 2001: 243)

While Slodoba is correct to question the effectiveness of current approaches to classroom music his solution raises issues in relation to pupil entitlement and

inclusion. Recent curriculum based attempts to address the concerns relating to the dissonance between school music and the musical lives of the pupils are currently being explored and analysed by an ongoing informal learning project sponsored by Musical Futures in England. The project attempts to apply the principles drawn from the learning practices of popular musicians within the formal music curriculum (Green and Walmsley, 2006). This goes beyond the issues relating to musical content to focus on new pedagogical methods. It is an attempt to investigate:

> how far it is possible and desirable to incorporate informal music learning practices into formal music education; how the incorporation of such practices can affect young teenagers' skill and knowledge acquisition processes, and how such practices can change the ways pupils listen to, understand and appreciate music in and beyond the classroom (Green, 2008: 2).

Green's findings suggest that pupil motivation, along with their ability to learn autonomously and work co-operatively, is much enhanced by such approaches. More contentiously the role of the music teacher is brought into question. For Green this means that pupils work 'without instructional guidance' from their teachers. This may have real educational value in certain musical contexts. However, it also suggests a more general crisis of confidence in music education where the music teacher is seen to be part of the problem. Burnard, in a recent book on music education and digital technology, has pointed out that 'music teachers are constantly criticised and labelled as less successful than those from other disciplines' and yet, they 'continue to be under-resourced, lacking appropriate technologies and time to think through what technology can offer' (Burnard, 2007: 201).

Interestingly, technology is somewhat overlooked in Green's informal learning project although the Musical Futures umbrella of resources acknowledges that technology can play a key role in classroom creative work (Ashworth, 2007) and the dissemination of pupils' outcomes to a wider audience (numu, 2007) . As already stated it also focuses on the re-creation of music through listening and performing. Just how teachers and pupils perceive of musical creativity will ultimately impact on curriculum activities and the value given to them. The following research probes the values of a group of student teachers embarking upon teaching.

4.4 – Conceptions of creativity in the music curriculum

In the light of the confusions surrounding educational creativity my research probed the views of a group of postgraduate music students, as described in Chapter 1, who were training to be secondary music teachers in England. The small-scale study – which sought their responses in relation to musical creativity in the classroom – was longitudinal and took place over the participants' training year. Areas covered in the study included: the students' own experience and attitudes toward creativity; the students' views of what pupils might learn when engaging with creative work; the problems that students thought pupils might experience in relation to creativity; the role that creativity had played in the students' own teaching; the problems that students encountered in relation to their own musical creativity.

The study was designed to get a snapshot of the group's perceptions in relation to musical creativity 'before' and 'after' their experience of teaching in schools. Hence an initial questionnaire (see Appendix 1a) at the beginning of the year was followed up by in-depth interviews (see Appendix 1b) at the end of the year. The whole group of eighteen students agreed to participate in the study but

the size of the 'questionnaire' and 'interview' group varied slightly. There was also a small imbalance in gender within each group (Fig. 22).

	Group size	Female	Male
Questionnaire	18	11	7
Interviews	16	9	7

Fig. 22: Composition of beginning teacher group

4.4.1 – Response 'before' teaching

As outlined in Chapter 1, the questionnaire was timed to capture the attitudes and experiences of the beginning teachers (BTs) in relation to musical creativity *before* they embarked upon a substantial teaching practice experience. In effect, it was an attempt to take a snapshot of their views that remained uncoloured by the rigours and realities of a classroom experience. Hence the responses were gathered in the first four weeks of their thirty-six week course.

The profile of the students accorded with other recent studies in this area (Hargreaves et al., 2003). The group were in their early to mid 20s, had first degrees in music, and most had taken public exams in music (GCSE, 'A' level, Associated Board) prior to university study.

The students' undergraduate experience had mainly focused on performance within the European tradition. Creative work appeared to be rare in their undergraduate work. When it had occurred, it was mainly driven by the assessment requirements of previous courses of academic study. However, this group had a degree of variation from the norm in that a small group of students experienced jazz/rock, music technology and/or ethnomusicology as the main

focus of their degree. Consequently their creative experiences, as further verified in the interviews, were different from the classically oriented students (Fig.23).

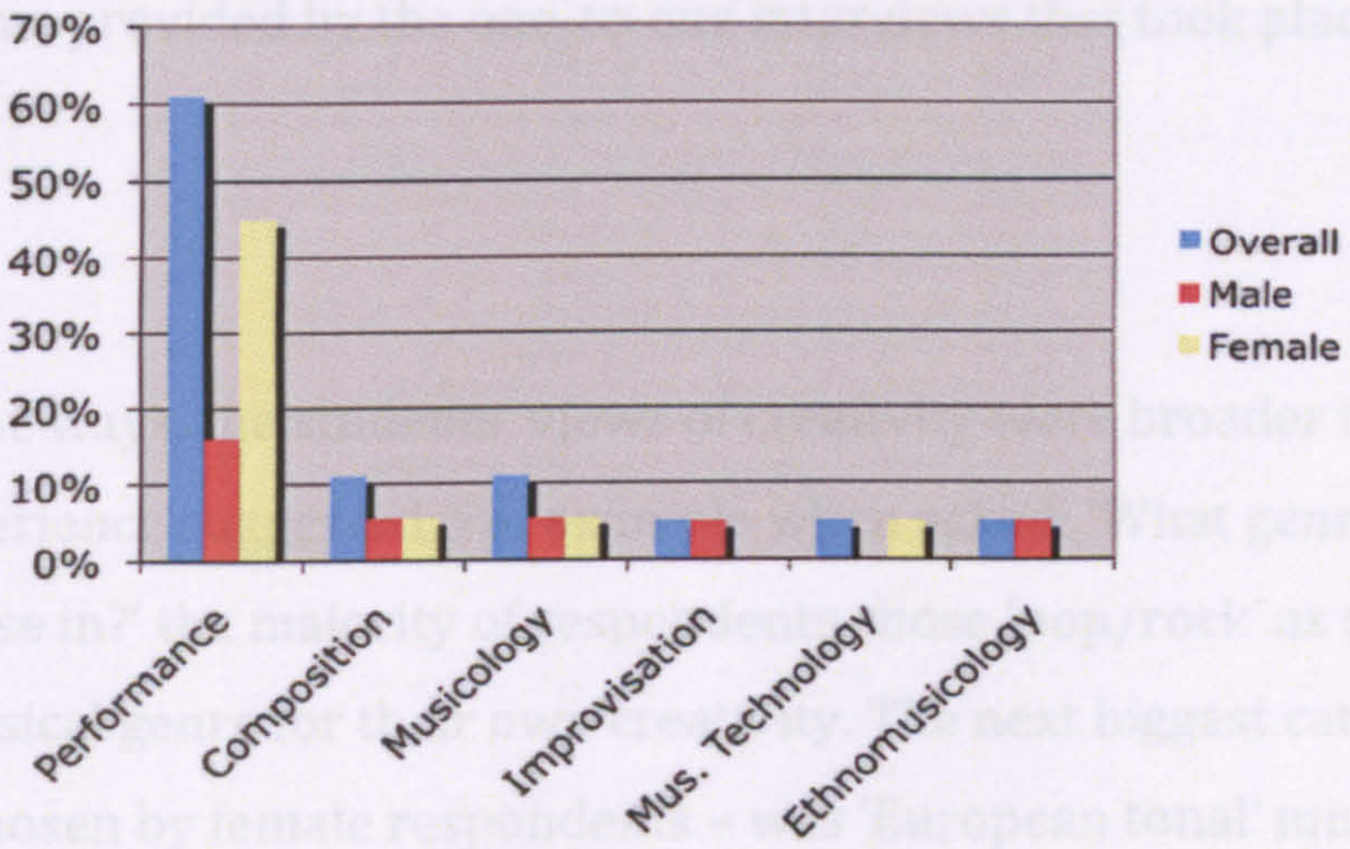

Fig.23: Main focus of beginning teachers' undergraduate degree.

When describing the detail of their creative work to date most respondents described it as 'composition' related. However, many also described it as some sort of 'performance'. Surprisingly only a few mentions were made of 'improvisation'. Some confusion, or perhaps a broader conception of creativity, arose in a few respondents who thought that other activities such as 'analysing' and 'aural' were creative ones (Fig. 24).

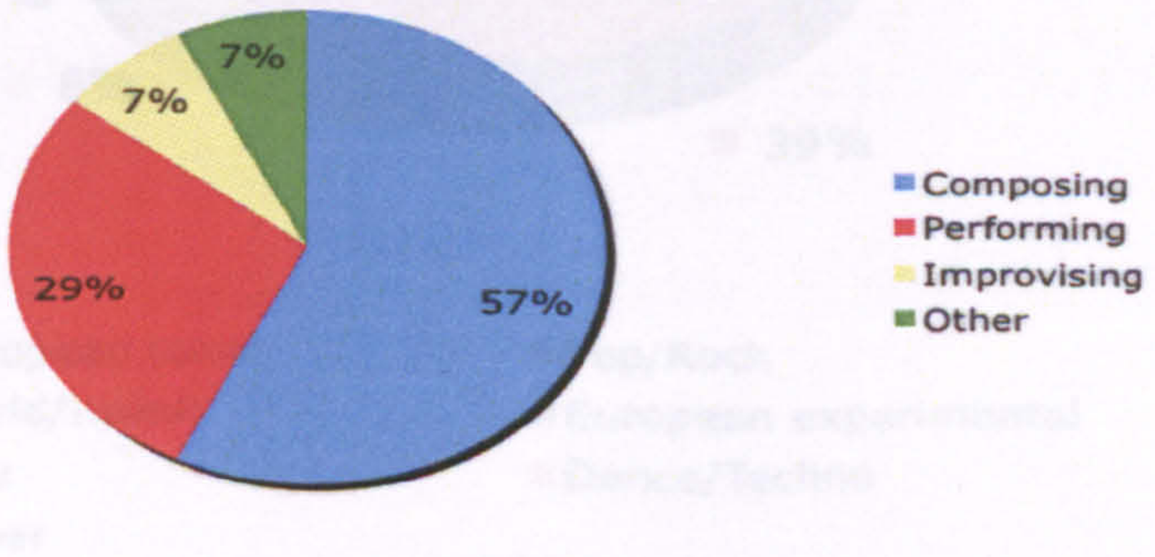

Fig. 24: Description of BTs' creative work to date

These findings once again emphasised the impact of a school and undergraduate education that tended to focus on the development of instrumental skills. Creativity, when it did happen, appeared to be linked to the assessment requirements of public and undergraduate exams. More revealing detail relating to this area was provided by the one-to-one interviews that took place at the end of the year.

In some ways, the students' views of creativity were broader than their previous experience suggested. For example when asked: 'What genre would you use to compose in?' the majority of respondents chose 'pop/rock' as the preferred musical genre for their own creativity. The next biggest category– exclusively chosen by female respondents – was 'European tonal' music. Somewhat in parallel 'European experimental' was only chosen by a small number of male respondents. It was surprising to see 'world/fusion' (a staple of the music curriculum for many years) featuring so little in respondents' choices. Jazz also exhibited a low response. Both these genres appeared to be distant from the students' musical lives unless they had studied them at undergraduate level (Fig. 25).

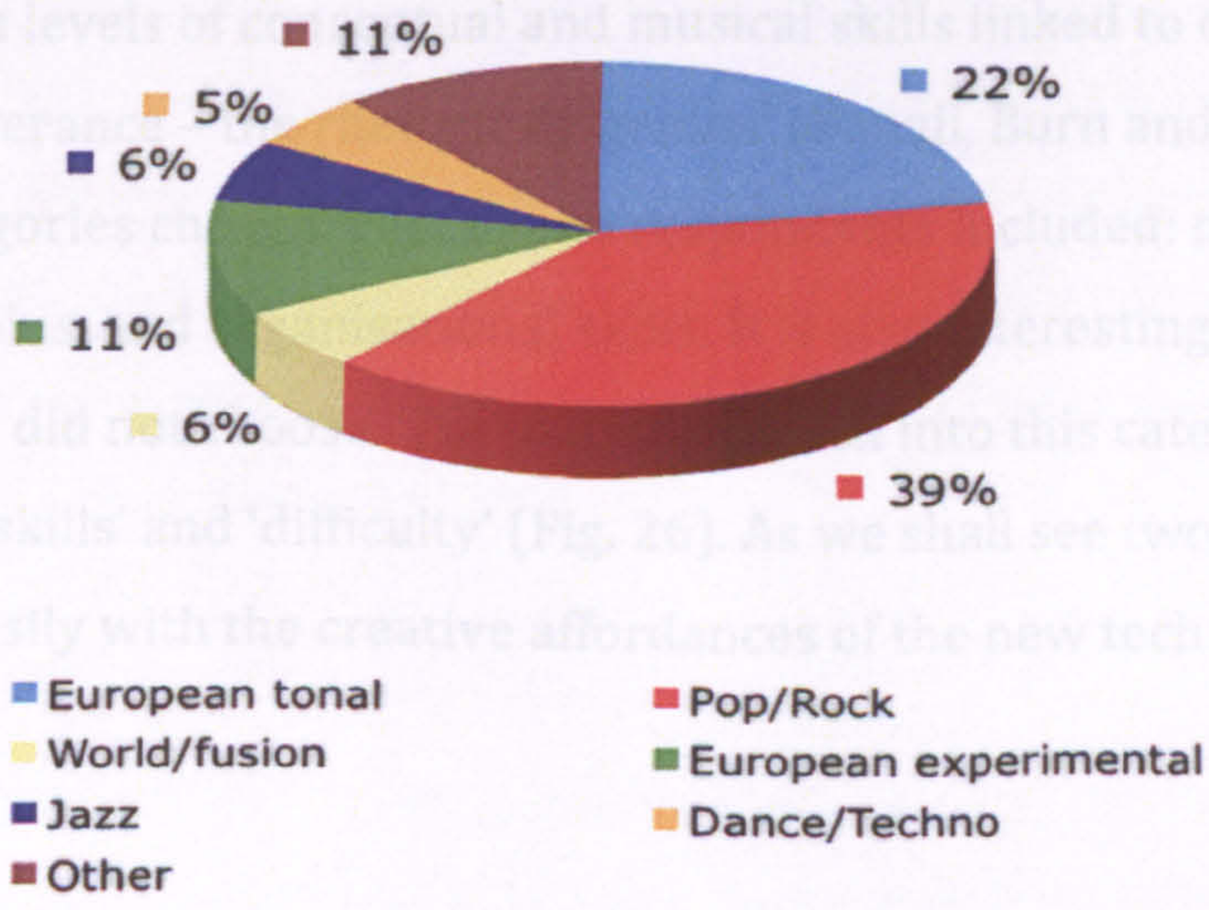

Fig.25: BTs' choice of creativity genre

The students were asked: 'What sort of attributes do you think a good composer/creative musician should possess?' They were offered three choices from a list of random 'attributes' which sought to mix abstract notions of art music (e.g. 'genius') with skills (e.g. 'performance skills') and aspects of popular music (e.g. 'tunefulness'). The list given was as follows:

Tunefulness
Performance skills
Originality
Notational skills
Seriousness
High level of musicianship
Popular appeal
Genius
Computer skills
Social skills
Sincerity
Inspiration
Difficulty
Accessibility
Authenticity
Organisation skills

Overall the highest scores were achieved by 'high level of musicianship' followed by 'inspiration' and 'originality' in joint second place and 'performance skills' in third. This appears to suggest a Eurocentric view of creativity - possibly including art music, certain types of progressive rock and modern jazz - that emphasises high levels of conceptual and musical skills linked to original and inspirational utterance – the rhetoric of 'genius' (Banaji, Burn and Buckingham, 2006). The categories chosen least by the respondents included: notational skills, seriousness, genius, and organisational skills. It is also interesting to note what the respondents did not choose. 'Popular appeal' fell into this category along with 'computer skills' and 'difficulty' (Fig. 26). As we shall see two of these 'non-choices' sit uneasily with the creative affordances of the new technology.

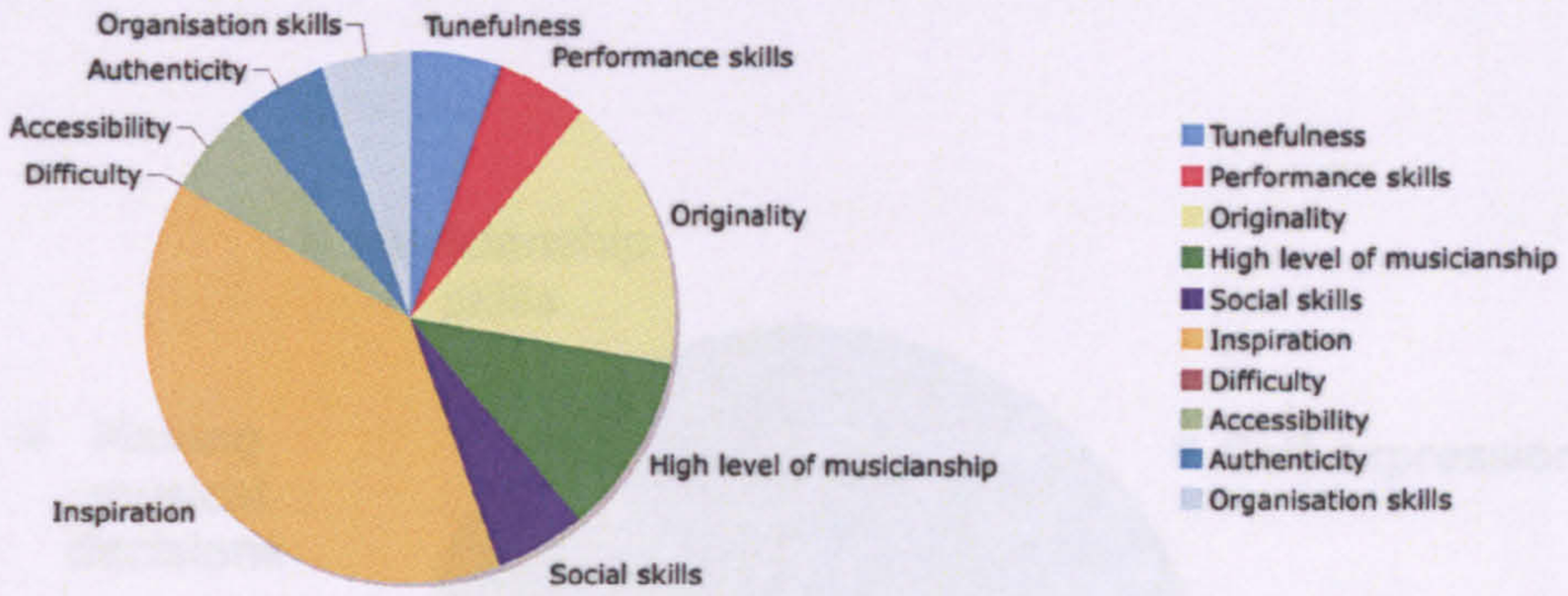

Fig. 26: BTs' first choice of attributes thought to 'be creative'.

Responses to the prompt: 'Suggest how musical creativity might play a part in your initial teacher training year' elicited responses relating to planning, effective teaching, motivation and modelling. While the responses were still somewhat unfocused, there appeared to be a lot of potential good practice here. In the changed context of the classroom the respondents appeared to stress 'little c' creativity (Craft, 2005) – self-directed creativity that would allow them to get the job done and engage the pupils. Moreover, the response to this contradicted the previous response - that high levels of inspirational musical skill and conceptual understanding are the most valuable creative attributes - in favour of a broader application of the term. There appeared to be two versions of creativity in the minds of the respondents: one that applied to 'real' music and one that applied to the classroom.

This was also evident in the response to the prompt: 'State two things that pupils might learn when engaging in musical creativity'. A majority of respondents stressed the importance of developing their pupils' self-expression

and life skills. These appeared to be more important than the development of musical skills and understanding and making musical decisions (Fig. 27).

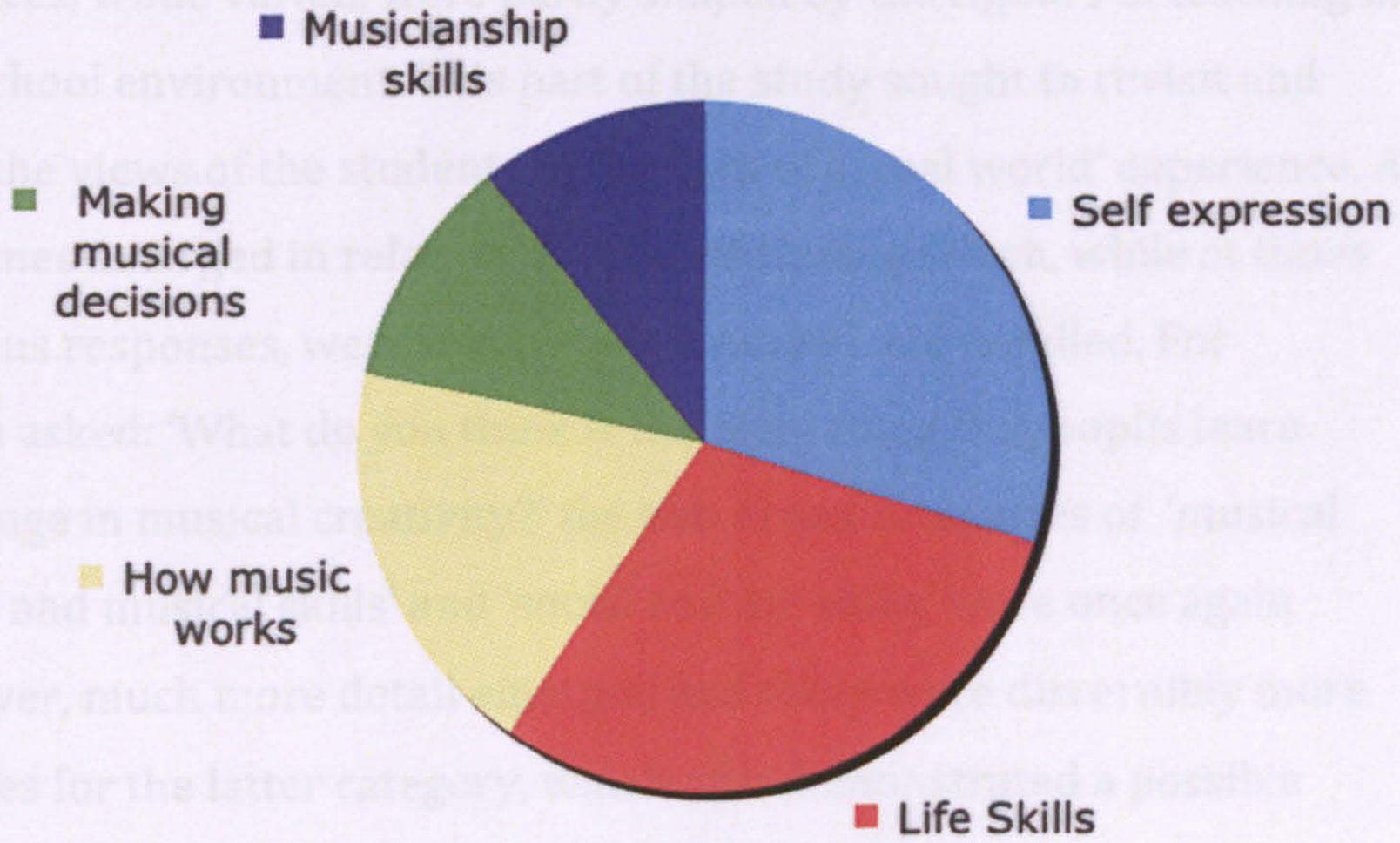

Fig. 27: What pupils might learn by being creative – 'before'

The areas relating to musical creativity and teaching were more fully probed in the individual interviews that followed at the end of the year. However, the emphasis on self expression and life skills remained important even after the students had completed their classroom experience. It suggested a troubling anomaly between the different versions of musical creativity - 'real world' and 'classroom' – that the beginning teachers held. Their belief that creativity requires a 'high level of musicianship' alongside attributes such as 'inspiration' and 'originality' did not feature in the classroom version of creativity. Moreover, their previous training, mainly focusing on performance and composition, distanced them from their own musical creativity.

4.4.2 – Response 'after' teaching

In-depth individual interviews took place at the end of the teachers' training year. By this time, the group had taught in two schools over a period of 120 days. Their experiences, while varied, were partly shaped by the rigours of teaching in an inner city school environment. This part of the study sought to revisit and further probe the views of the students in the light of a 'real world' experience. A number of themes emerged in relation to the questioning which, while at times echoing previous responses, were much more rounded and detailed. For example, when asked: 'What do you think is the main thing that pupils learn when they engage in musical creativity?' the two broad categories of 'musical understanding and musical skills' and 'social and life skills' were once again evident. However, much more detail emerged and there were discernibly more coded responses for the latter category, which also demonstrated a possible gender bias (Fig. 28).

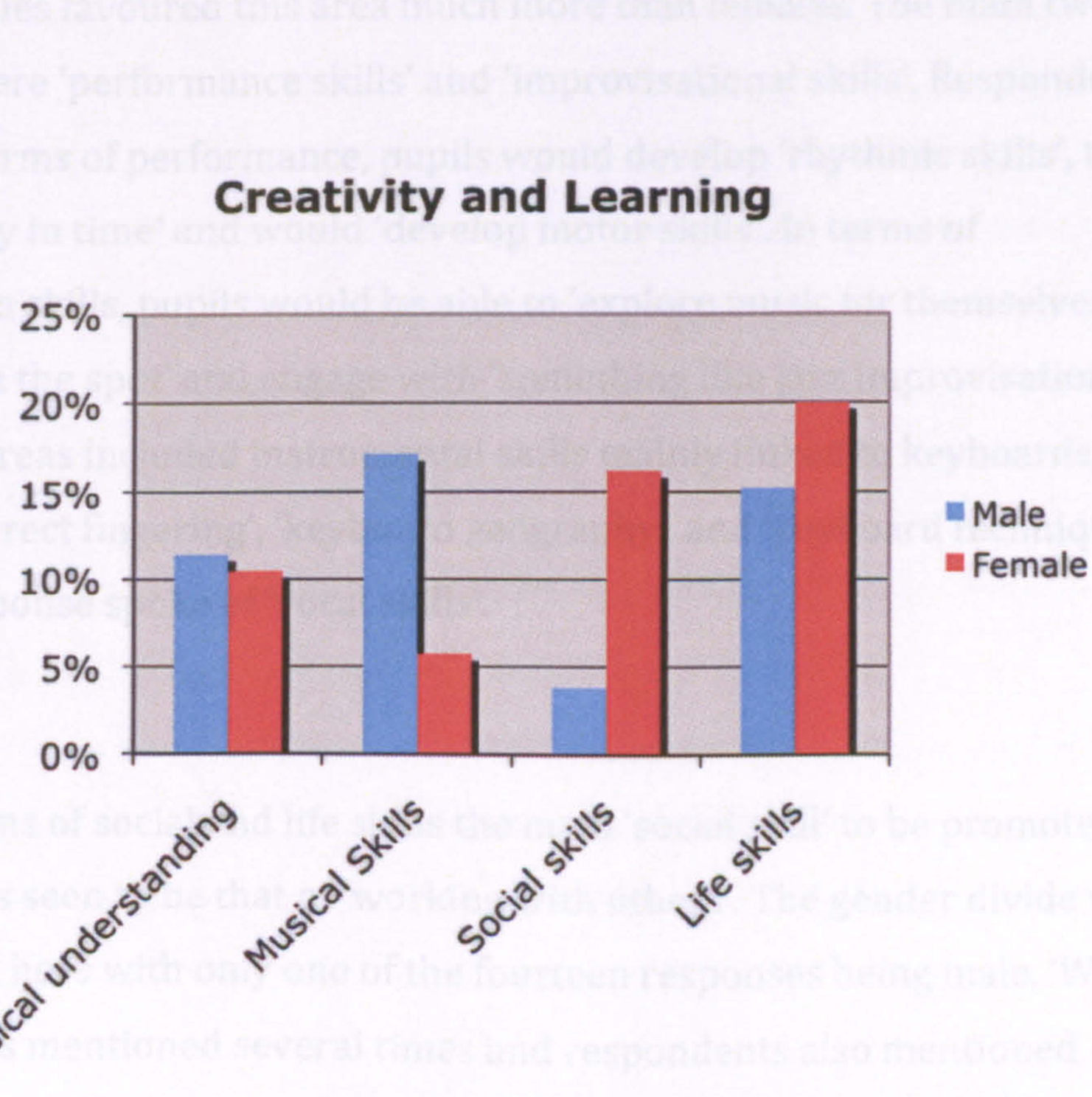

Fig. 28: What pupils might learn by being creative – 'after'

The responses relating to 'musical understanding' were evenly balanced between the genders and tended to focus on learning 'about how music works' through engaging with musical creativity. The largest proportion of responses spoke of 'musical frameworks' with pupils' responses being guided by 'pentatonic scales', 'structures', and 'blues sequences'. Other areas mentioned by respondents covered 'genre and style', 'learning by doing' and 'applying previous musical learning'. One respondent was pleased that some of the pupils' efforts 'sounded like real music', adding that:

> It didn't sound like Year 7. It sounded like you just put a CD in. Really great! (K, female, beginning teacher)

The number of responses focusing on 'musical skills' as a learning outcome was approximately the same as those for 'musical understanding'. However, males favoured this area much more than females. The main two categories were 'performance skills' and 'improvisational skills'. Respondents felt that, in terms of performance, pupils would develop 'rhythmic skills', the ability to 'play in time' and would 'develop motor skills'. In terms of improvisation skills, pupils would be able to 'explore music for themselves', 'do something on the spot' and engage with 'something like jazz improvisation'. Other skills areas included instrumental skills mainly linked to keyboards, for example: 'correct fingering', 'keyboard geography', and 'keyboard technique'. Only one response spoke of 'vocal skills'.

In terms of social and life skills the main 'social skill' to be promoted by creativity was seen to be that of 'working with others'. The gender divide was quite marked here with only one of the fourteen responses being male. 'Working as a team' was mentioned several times and respondents also mentioned 'collaborating' and 'interacting'. Quite clearly these responses were located in the convention of creative music making as a group activity. Linked to social skills

were the skills of 'listening' and 'communicating'. However, it was not always clear if this meant listening and communicating musically. Some saw it as a musical act as in: 'listening... and responding to what other people are doing musically' (O, female, beginning teacher); while others saw it as a more cross-curricular strand as in: 'a good skill to have in any other subject as well as music' (E, female, beginning teacher).

The category of 'life skills' could be seen to overlap with that of 'social skills' on occasion. However, this category of response – the largest in relation to creativity's promotion of learning – tended to emphasise the personal. Hence the biggest response cited 'personal expression' as a learning outcome of creative learning. Once again the gender bias was marked with two thirds of the response in this category coming from females. In the main, respondents talked about the ability of pupils to 'express themselves' with variants suggesting 'freedom', 'choice', the 'human' and the 'original'. One respondent outlined it as follows:

> How to express their own musical ideas out loud. 'Cause quite often we have ideas up here (points to head) but we don't always know how to express them sort of... on an instrument...so I think they are learning that. (E, female, beginning teacher)

Another large response relating to life skills was the notion that creativity fostered 'confidence'. This was sometimes linked to 'expression', as in: 'confidence in your own creative thoughts'. But in the main it appeared that 'confidence' grew within the act of creativity as in: 'it's confidence building as a result'. Other life skills thought to be promoted by creativity included 'working independently', and 'motivation'.

There is no doubt that the group felt the social aspects of music making to be important. In fact, female response felt them to be more important than musical learning. This is important to note, for it could lead to confusion with regard to the knowledge base of the subject and the role of music education within an increasingly contested school curriculum.

The view that creativity promoted confidence was somewhat contradicted by the themes that emerged in relation to the question that asked: 'What do you think is the main difficulty that pupils experience when engaging with musical creativity in the classroom?' For example, this description suggests a pupil struggling with a lack of confidence:

> And she was sitting at the computer going: 'I can't do it'. And she just got a bee in her bonnet that, no matter what I tried with her, she went: 'I can't, I can't, I can't. (G, female, beginning teacher)

Responses here revealed that 'being vulnerable' was a major hurdle for pupils. The reasons for being vulnerable often centred on a lack of confidence both in personal and musical terms (Fig. 29).

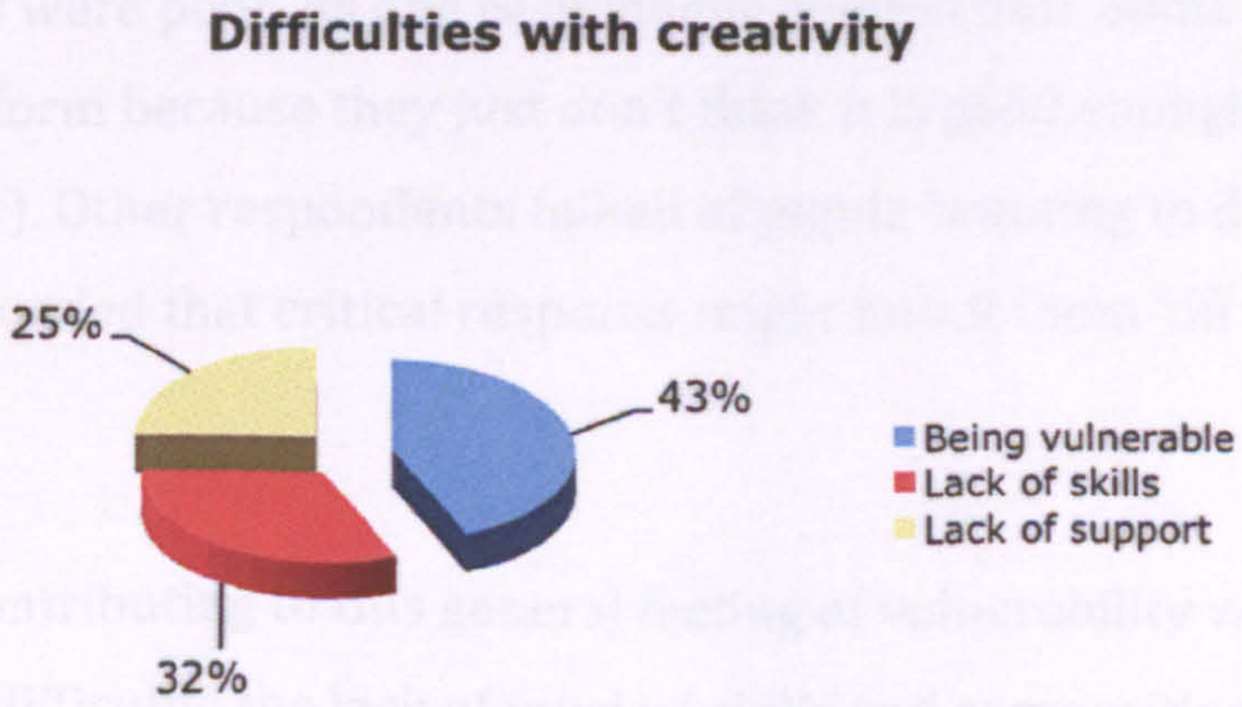

Fig. 29: What BTs think pupils find difficult with regard to creativity.

An example of this is suggested by the following:

> But the quieter ones, they might have fabulous ideas, but you never get to hear them, because they are so quiet. (H, female, beginning teacher)

> Also you've got not feeling confident with the materials or the instruments... so that's another thing that might get in the way (A, male, beginning teacher)

However, there were also other risks in being creative. Displaying and sharing the 'personal' and not wanting to appear 'different' also emerged as factors:

> In lots of ways it puts them in a very vulnerable position if that creativity is to be shared with lots of other people...I think for young people not looking different or foolish is a very driving factor. (M, female, beginning teacher)

Vulnerability also emerged in contexts where pupils felt unprepared and/or the musical outcomes were poor. As one respondent pointed out: 'Some (pupils) don't want to perform because they just don't think it is good enough' (C, male, beginning teacher). Other respondents talked of pupils 'wanting to do the right thing' but were worried that critical response might knock them 'off their perch'.

Perhaps contributing to this general feeling of vulnerability was another category of pupil difficulty: the lack of musical skills and compositional technique. Problems mentioned included being unable to perform instrumentally or vocally, write the music down and being unable to think creatively.

> If their skills aren't adequate for the task then they can't access the information that is needed. (L, male, beginning teacher)

Related to lack of skills was the area of response which perceived that pupils often lacked sufficient musical support to engage with musical creativity. As one respondent stated:

> Well, just from my own personal view, if somebody said to me, you know, 'compose this', it would take me ages to come up with the first idea. I don't think enough examples are given of potential ideas. (P, female, beginning teacher)

All too often pupils appeared to have 'too many choices' and lacked sufficient 'starting points' and 'structure'. Other areas mentioned in this response related to the limitations of classroom resources ('for the first two years they play the tuned percussion') and the distance of the musical materials ('often the style of the music that they are composing is a bit alien to them').

Quite clearly the students' experience of the classroom had led them to conclude that creativity was not always a good thing. In particular the vulnerability felt in relation to personal wellbeing and musical ability emerged as a negative aspect of the creative experience. Furthermore, the difficulty of articulating creative response in a classroom context of varying abilities and resources posed organisational and pedagogical difficulties. It might be that, in the light of these musical difficulties, social and life skills were grasped as a positive outcome of creativity.

4.4.3 – Creativity in Teaching

Responses to the question, 'Has musical creativity played a part in supporting your own teaching this year?' revealed that the largest creative act in their own teaching arose through modelling and making materials (Fig. 30).

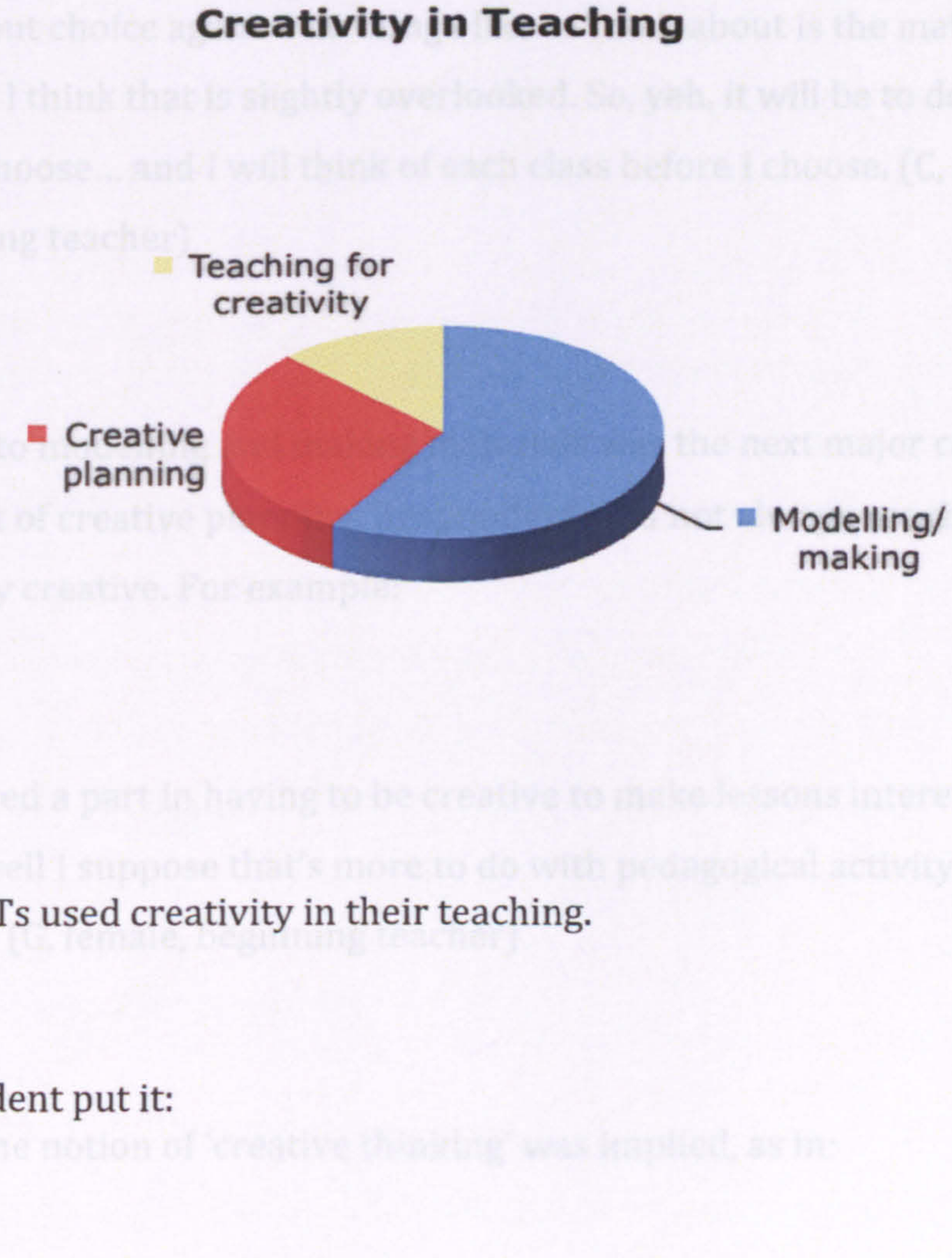

Fig. 30: How BTs used creativity in their teaching.

As one respondent put it:

> When I started teaching I didn't use it much. But then I realised that in order to model the things effectively, and to show pupils what you wanted, it is really necessary that you can compose something to a certain degree. (O, female, beginning teacher)

Respondents also mentioned playing 'examples', 'modelling' and a process that 'demonstrated what I mean by singing it' and 'watch(ing) my hands'. The notion

of 'making materials' was broad in terms of musical creativity and could be low level as in: 'I've used my musical creativity to create resources, for example backing chords and stuff like that' (G, female, beginning teacher). In this area it appeared that respondents were reappraising their own concepts of creativity in the light of teaching. For example:

> It is about choice again. One thing I like to think about is the material I choose. I think that is slightly overlooked. So, yeh, it will be to do with how I choose... and I will think of each class before I choose. (C, male, beginning teacher)

Linked to modelling and making materials was the next major category of responses, that of creative planning. Respondents did not always see this as being musically creative. For example:

> It's played a part in having to be creative to make lessons interesting so, erm... well I suppose that's more to do with pedagogical activity than musical (G, female, beginning teacher)

Nevertheless the notion of 'creative thinking' was implied, as in:

> I'm not sure if my musical creativity has (been used) but I think my thinking has...I'm coming up with creative ideas all the time and I'm always looking for new ways around a problem. (K, female, beginning teacher)

Another area to emerge was that of teaching 'for creativity' and mention of 'safe environments'. Respondents talked of 'to try and make them (the pupils) be creative' and ' I think a lot of what we teach is to be creative'. One respondent, perhaps conscious of the 'vulnerability' issue, recognised the importance of the emotional environment in the promotion of creativity, stating:

> I try and establish an atmosphere where it is okay for the boys to take risks without fear of being laughed at. So I guess, yes, that's definitely informed the way I want to teach (M, female, female)

The strands outlined by the NACCCE – that of 'teaching creatively' and 'teaching for creativity' – are clearly suggested here. However, the area of teaching for creativity requires a lot more focus. Moreover, the trainees - perhaps owing to the artistic assumptions embedded in their undergraduate training - are still unclear as to what is and is not a creative act. I sense that more acknowledgement of the creativity capable of being expressed in the classroom would improve the self-image of music teachers and their profession.

4.4.4 – Time for teacher creativity

It appeared that the opportunity to develop creatively could also be constrained by the demands of the school and administrative context. When asked 'Have you experienced any problems in relation to your own musical creativity this year?' the overwhelming response was of 'not having enough time' due to the demands of the course. So, for example, the teachers stated: 'I mean, I don't get the time...I'd like to' (D, male, beginning teacher) and 'Well, over the year my creativity...some of it has gone out the window 'cause there's (no) time...' (H, female, beginning teacher). Others talked of lacking direction and of 'not going forward as fast as I should be...as a musician' (B, male, beginning teacher).

One of the main culprits in robbing them of their musical space was 'paperwork', for example:

> You don't get time to do that (creative work) because by the time you've done all your planning and your assignments that you have to do, you're just too tired... (J, male, beginning teacher)

Other mention of 'paperwork' included 'target setting ' and meeting the 'standards'. The 'workload' involved students in a 'difficult balancing act' between their teaching and musicianship. It invariably led to a curbing of musical activity, for example:

> I haven't been playing with other people. That was always a good way to get influences...to play with other people... and there hasn't been much of that. (C, male, beginning teacher)

The beginning teachers' musical education prior to the course also affected their ability to express their creativity. One respondent stated: 'I was out of practice because I never took it (composition) on at university' (O, female, beginning teacher). This respondent felt that the performance nature of her musical training was to blame, adding 'So we were pushed down the route that they (the teachers) liked (i.e. performance)...which was fine but it meant that I didn't carry on composition' (ibid.). Another respondent felt that their instrument was somehow inappropriate for creative work: 'I play the cello. That's the odd thing. Like the cello is so classical...I keep wanting to join rock bands but everyone says: ' "Rock Band" – you can't come in!' (K, female, beginning teacher)

Current approaches to teacher education and professional development demand that beginning teachers are seen to be accountable through meticulous record keeping and paperwork. A student's progress is, to a large extent, scrutinised through these records. However, a culture of paper-based evidence might be seen to impinge on teaching and musical performance. We should be aware that, unless music teachers have the time to develop both musically and creatively, their pupils' musical experience will diminish.

4.4.5 – Being prepared for teaching creativity

The issue of the group's previous musical training, hinted at above, was addressed more directly in the question which asked: 'Do you feel your undergraduate training prepared you sufficiently for promoting musical creativity in the classroom?' This area is problematic for those intending to be teachers in the UK. There is a dichotomy between the musical identities shaped on undergraduate courses and those shaped by classroom contexts. Nor are the issues relating to identity solely musical. They also relate to how musical academics and professionals might perceive of 'teaching' and 'teachers'. While a full discussion of these perceptions falls outside the scope of this research, it will be seen that the respondents in the study articulated a number of problematic areas in relation to their previous musical education.

When grouped into negative and positive responses, the negative response far outweighed the positive (Fig.31).

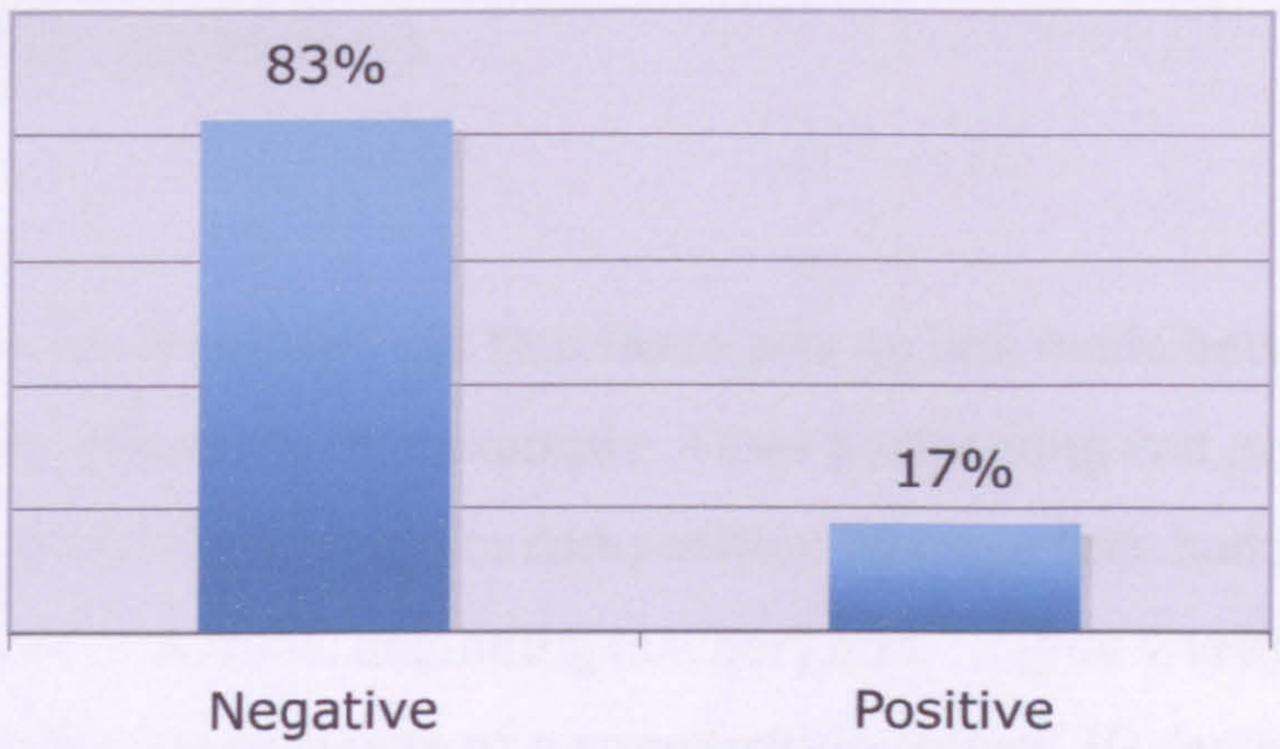

Fig. 31: Views relating to undergraduate experience re. promoting creativity

The largest group of negative responses concerned the undergraduate focus on performing at a high level. The following statements were typical:

There was a lot of performing...(H, female, beginning teacher)

It was gearing you towards a playing career...(P, female, beginning teacher)

You were going to be a professional musician... that's it...(A, male, beginning teacher)

Moreover, there was a sense in which this was somewhat narrow and exclusive. For example, one respondent perceived that: 'the problem with music colleges is the fact that it gives you a very narrow view that they sort of train you up to be the very best musician' (A, male, beginning teacher). Another was aware that: '...it prepares you to be an instrumental performer where there are very little (sic) jobs.' (G, female, beginning teacher) This emphasis on professional performance appeared to exclude other types of music making: For example:'

I've always just read music. I never needed to improvise really... and I never did' (O, female, beginning teacher) and 'You were able to do jazz and world music... but the emphasis was so much on being this performer...of other people's music' (G, female, beginning teacher).

Respondents pointed out that there was no link made between performing and creativity. For example: 'I saw performing and my instrumental skills as being totally unrelated to composition because they had never really been integrated' (I, female, beginning teacher) and, ' ...(you were) encouraged to either do a performance course or a composition course' (G, female, beginning teacher). This in turn led to a lack of confidence when trying to be creative through their instrument. Respondents talked of getting 'bogged down' and of it not 'sounding right'.

The gap between performing and composing at university and conservatoire was further widened by academic insistence on compositional techniques drawn from twentieth century modernism. This led to a degree of alienation on the part of the students. So, for example: 'In my first and second year it was all twentieth century...well I thought it was strange music and I don't really like it.' (O, female, beginning teacher) Another respondent fumed: 'I also did contemporary music studies, which was also compulsory...and I hated it, hated it'. (N, female, beginning teacher) It also led to a degree of confusion regarding the compositional process, for example: 'To be honest I didn't really know what I was doing when I wrote music. I still don't know. I suppose there was too much emphasis on originality...'(C, male, beginning teacher). The emphasis on originality led to some surprising outcomes, for example: ' We did lots of experimental music, lots of sonatas for twelve pedal bins and a baking tray'(E, female, beginning teacher). The assessment of the students' work relied on them meeting the expectations of their tutors. Here a respondent describes her desperate attempts to improve her grades:

It was Christmas (and) we were having a family thing. I've got quite a musical family – not massively – but they know how to read music. I passed round a piece of stave and said 'can you write a bar (of music)?' That is what I handed (in as) my composition. I did better on that than on my first one that I really worked at. It appeared to me to be a complete joke. (I, female, beginning teacher)

In many instances the foundations of creativity were missing. As one respondent said: " I still didn't know where to start so it was all a bit of a mess really' (J, male, beginning teacher). Unfortunately it led to some students giving up on the idea of creative work. For example: ' It really bored me to be honest. That's why I ended up doing 'Caribbean Woman Writers' as one of my options' (N, female, beginning teacher).

The emphasis on high levels of performance and 'advanced' compositional techniques led to music in schools being overlooked or ignored. The following is typical:

> 'Classroom' was never mentioned in the three years I was at uni (P, female, beginning teacher)
>
> Nothing in actual guidance toward the classroom...(P, female, beginning teacher)
>
> It didn't give anything for teaching in schools or actively engaging others in creativity...(A, male, beginning teacher)

One respondent did take a module on 'music education' but: 'it was mainly about music workshops...the 'visiting professional' issue... rather than the long term development of kids' education' (A, male, beginning teacher).

To be fair, there were a number of respondents who felt their previous music education had been valid. Interestingly these mainly referred to musical areas outside the classical tradition, as in:

> jazz and popular music...I did that too ...that was excellent...(N, female, beginning teacher)
>
> ethnomusicology...I loved that. I got a 'one' in that, every year...(N, female, beginning teacher)
>
> then I did studio composition, which was brilliant...(H, female, beginning teacher)

Whether this liking for popular idioms, world music and ICT was a reflection of the students' preferences, or that they were more effectively taught as subjects, is open to conjecture.

However, apart from these pockets of positive response it is apparent that most respondents felt dissatisfied by their undergraduate training. An emphasis on high levels of performance, modernist compositional techniques and a lack of focus on music education left the respondents feeling ill prepared to deal with the demands of teaching in schools. It would seem that, while higher education should continue to maintain standards of academic excellence, it nevertheless needs to address the relevance of courses in relation to the future career paths of their students.

At the end of each interview respondents were invited to make additional comments in relation to creativity. Some took the opportunity to question the meaning of creativity. For example: 'It's a weird one because you ask yourself:

"what does it mean to be creative?"' (L, male, beginning teacher) and: 'I've always thought of it as you creating some kind of music, like composing. But then, you know, reinterpreting music is also creative.'(K, female, beginning teacher)

Some respondents continued to denigrate their classical training while praising other traditions. For example: ' I have to say that I think classical training kills creativity' (H, female, beginning teacher), while another enthused: ' I just admire jazz musicians so much. Like I think they are making really excellent stuff. I think I value it more...more than classical musicians' (K, female, beginning teacher). By contrast, a rock musician who had undertaken a pop/rock course at undergraduate level questioned the notion of creativity in his training:

> A lot of what I was doing wasn't creative. It had creative elements but it was more ability oriented...you know, technical ability. I'd go away and learn bits, copy bits, note for note...Eric Clapton solos we had to copy...people did. We all did. (B, male, beginning teacher)

This respondent also questioned the creativity implicit in jazz: 'Jazz improvisation...how creative is that? You are using the same licks and solos and arpeggios and stuff' (ibid).

Some respondents took the opportunity to stress the importance and value of musical creativity. For example: 'I think the whole point of having music on the curriculum is to give these kids a decent opportunity to express themselves, to enjoy themselves...' (G, female,beginning teacher). Another affirmed that: 'Some of the best lessons – where the students have been engaged the most – have been where the students have been creative' (A, male, beginning teacher). On the other hand one respondent worried that creativity 'sometimes gets lost'. She went on:

Music isn't a subject you're going to do because it's going to make you very wealthy in life. It's a subject people do because they love it...because they have a deep connection with it. And you are not going to forge that connection if you forget about the creative side...which unfortunately sometimes happens. So I'd say it was pretty crucial. (M, female, beginning teacher)

4.4.6 – Summary: conceptions of creativity

Creativity is considered 'crucial' by this socio-musical group – but what sort of creativity? The beginning teachers surveyed in the research moved, over the course of the year, from a musical identity shaped by their undergraduate training to one that began to be shaped by the demands of the course and the school, alongside the needs of pupils. In doing so they reappraised their views of what it is to be musically creative as musicians and teachers. They also became aware of certain gaps in their own knowledge and the impact of creativity – both positive and negative – on the pupils they taught. While they found the year challenging, they nevertheless continued to endorse the importance of creativity.

However, they remained unsure about the nature of creativity. Their responses suggest that there appears to be some who view creativity as fostering musical understanding and skills, while others view it as fostering more generic life and social skills. Some might view this as a cop out in the absence of performance skills and sufficient resources. Is it enough that the music lesson develops communication skills? More to the point, does it do this effectively? As we have already noted in Chapter 2 the pupils' perceptions of working in large groups suggest otherwise. In a contested, crowded and increasingly assessment driven curriculum, the meaning of a 'creative music education' needs to clarified.

Unless it is, the deep connection we hope to forge between musical learning and creativity might be lost.

One important area to emerge was the context for creativity in the classroom. As we have seen, the beginning teachers suggested that pupils could feel vulnerable in creative contexts –either due to lack of skills, support, poor resources or the nature of the creative environment. As discussed in Chapter 2 much of this is to do with the assumptions that drive the music curriculum. How can we make creativity in the classroom safe and purposeful and what are the implications for time and resources? How might we address the fact that many pupils lack traditional performance skills to articulate their creativity? How are the pupils to value and validate their creative excursions and how will these relate to their multimodal lives? In the light of these questions we return in the next section to the research into the new technology – in particular its creative affordances and the perceptions of the pupils who engaged in 'making' new music with GarageBand software.

Before leaving this section we should remind ourselves of the role of the teacher in relation to musical creativity. What skills should they possess and what support should they offer? Can they merely be facilitators or do they need to posses their own set of skills and conceptual understanding which enables them to teach 'for creativity'? It is clear from the research that the respondents' own preparedness in this area was lacking. A fuller discussion of the teacher's role – both in relation to creativity and the new technology – is presented in Chapter 6 of this thesis. However, it should be recognised that a teacher's ability to develop and thrive in a musically creative way may be severely curtailed due to the demands of an audit based education system. If this erosion of teachers' musicianship, professional development and creativity continues, it will not only impact on the standing of music teachers in general, it will also adversely affect the musical experience and creativity of the learners in their care.

4.5 – Creativity and the new technology

This section considers the new technology and its possible 'creative affordances' (Banaji, Burn and Buckingham, 2006). However, as already discussed above, creativity in the classroom is a confused area whose nature and educational purpose are hotly contested. The observations and interviews from the school-based research suggest that the 'creativity' inherent in the technologically mediated classroom could be perceived in a number of ways. These might be categorised as follows: creativity as an active process which *promotes learning* – as in the rhetoric of the creative classroom (Banaji, Burn and Buckingham, 2006); creativity as an *outcome of learning* which enables pupils to make new music– as in teaching for creativity (NACCCE, 1999); and, possibly linked to outcomes, creativity which allows pupils to feel *ownership* of the music they make, which validates their personal musical interactions and choices – as in the rhetorics relating to democratic creativity and the creative affordances of technology (Banaji, Burn and Buckingham, 2006).

4.5.1 – Creativity and the new technology in promoting learning

It is worth reminding ourselves here of the findings discussed in Chapter 2 – that the creativity afforded by the new technology promoted active engagement in the learning process. Pupils 'liked' what they were doing. They had 'fun'. They felt they were 'learning' about certain aspects of music. Action and awareness were merged. In these terms the pupils might be seen to be involved in what Csikszentmihalyi has called the 'flow' of creativity (Csikszentmihalyi, 1996). However, it also appears to be the case that the creative tasks designed by the teachers were important in guiding the pupils' musical interactions. In their report on the creative uses of digital video Reid et al endorsed this structured approach to teaching but noted that it clashed with the rhetoric of liberation and freedom that many teachers perceived as the essence of creativity (Reid, Burn

and Parker, 2002). The research discussed here suggests that the teachers who used GarageBand to promote learning did not hold this view of artistic freedom. They appeared to be conscious that providing a blank canvas, or blank sheet (Scrimshaw, 2001) for learning through creative interaction would not do. As one teacher respondent said in relation to the design of the learning:

> As a teacher I'm trying to get a group of 25 pupils in Yr 9 to compose a soundtrack to a music video... To get them initially enjoying it, and learning as well.... about structure and the way the sounds are set out... and musical choices. (Y, male, teacher)

4.5.2 – Creativity and the new technology as an outcome of learning

We have already discussed in Chapter 2 what pupils and teachers thought they were learning when engaging with the technology. However, a marked area of learning, not previously dealt with, concerned *how to be creative*. For example, a teacher respondent wanted her pupils to learn how to 'make good choices'. The pupils for their part felt they were learning 'how to make a rap' and 'how you create your own music and stuff'. In this context there were aspects of the software that allowed pupils to 'organise' sounds or aid them in 'getting sounds to fit'. Another pupil talked about 'experimenting and seeing'. It is worth pointing out that some of the other areas of learning already discussed, such as structure and instrumental timbre, may also have served the pupils in their learning of 'how to be creative'. There is also the suggestion that the possibilities offered by the software altered pupils' perceptions about their own creative potential. For example, Emma – who described herself as not musical –stated that she was:

> ...actually learn[ing] how to put music together instead of actually having to learn how to play the music.... like to make your own song or rap. (Emma, pupil, School 2)

As the interview continued it became apparent that she now felt empowered to create her own music, for example: 'I think I could try. I don't think it would be as good as some people's but I think I'd do pretty well'. (ibid.)

By engaging with the technology this pupil appeared to be learning something about herself – she 'can try' to be creative. This chimes with the creative experiences of Amy in the film 'We Are the People We've been Waiting For', which describes how she discovered her own potential for creativity through a hairdressing course at school:

> I never thought I was creative. I used to think...'oh god I can't write stories' and 'oh god not another poem in English'. Now, with the hairdressing, it has really pulled it out of me and it's a side of me that I've never seen before. But I love it. It's great. (Goodrich, 2009)

4.5.3 – Creativity and the new technology and ownership

When pupils were asked what they 'liked' about the new technology they stated that it enabled them to 'compose your own kind of music', 'make up your own tunes', 'produce', 'create', 'make different beats and stuff' and 'mix different types of music together'. They were also asked: 'Does GarageBand let you (the pupils) make up your (their) own music?' (see Appendix 1). The overwhelming view was that it did. Of the coded responses 60 were favourable as opposed to 9 who said

no and 8 who were ambivalent (see Appendix 2, Table 7). The positive response is encapsulated in the following from a teacher 'C':

> Yes, it does. Very creative. 'Cause essentially they're making music. It's not necessarily a traditional way of making music but they are making their own music and they are getting a buzz out of it. Probably more so than a lot of them would get in other music lessons. You know, they...You could argue I suppose that the whole thing of, well: 'are they using their own music to create their music'...Well, it's kind of possibly irrelevant in a project like that because, essentially all of the songs were different, even though they had the same starting point. So the creation is there... (C, female, teacher, School 2)

There are a number of themes here. There is the contrast between traditional and technological ways of making music. There is the fact that pupils are engaged. There is the acknowledgement that 'other types of music lessons' may only be partially successful. And there is the issue surrounding the absence of performing and the use of ready-mades. However, this teacher attests to the 'difference' of the outcomes, perhaps conscious of the fact that creativity should result in some unique stamp of the creators. This merges with the issue of ownership. Ownership is central to my own view of creativity which posits that pupils should feel that their creative music making reflects something of their own cultural and communicative world. Conscious of this the research probed whether pupils could take ownership of the ready-made materials. The following pupils thought they could, as in

> 'Yes. You can put everything together and change it completely from what everyone else has done' (Peter, pupil, School 3)

'Yeh. You are kind of making music but somebody's already created it. You just cut things in you want. So overall you make your own music…' (Eleanor, pupil, School 2)

'Yes, because you are still changing them, and fitting them and cutting them down to the size you want and taking the bits you want...'(Karen, pupil, School 2)

This easy acceptance of the ready-made may be to do with its place in the media rich musical lives of the pupils. As discussed in Chapter 2 the use of sampling technology is central to the development of musical forms such as rap and hip-hop. Moreover, a lot of digital borrowings and second hand dissemination goes on through sharing sites such as YouTube. Virtual music making is now presented in game form through such programmes as 'singstar' (singstar, 2010) and Guitar Hero (GuitarHero, 2010). While these are beyond the scope of this research they appear to be linked to the GarageBand software in a number of ways. They are fun to play and allow non-performing musicians to access musical materials. The musical context allows for interaction and choice. They start from known musical landscapes and empower through the interaction with technology (for a fuller discussion see:Missingham, 2007). In addition to console games there are a range of interactive loop mixing sites (for example,looplabs, 2010) where participants can share and exchange loops and mixes. The concept of the musical and video 'mash up' also feeds into the culture of reuse, where a number of pre-existing sources are 'blended' (for more information see:wikipedia, 2010) . A pupil encapsulated an awareness of these developments in appropriation and mixing when she said:

It does [allow you to make up your own music] 'cause when you like put 'does he have a track for me', a little beat from a Cheryl Cole song, a little beat from Beyoncé, you put it together it sounds a bit, you know, good,,, actually better than both songs... (Omalarie, pupil, School 3)

Other responses alluded to what pupils saw as the support for creativity offered by GarageBand. For one pupil it bypassed instrumental skills as in: 'It is easier through loops than piano because I can't play piano'. For another it provided starting points that provided models to build upon as in:

> Oh yeh. That really helps. Because if you have ever heard different rap songs they would have like the 'beats' in it. And so I wouldn't know how to get that just by the keyboard or anything so it really helps to drag it in (to the song) (Elle, pupil, School 2)

This ability to get started on the creative ladder was also appreciated by teachers. One teacher pointed out that: 'it doesn't give them restrictions, so if they are not able to play certain things... they can still find something they are looking for.' Another teacher accepted that the element of choice and musical construction would justify the activity as creative when he said:

> Their structuring music, that's where they are being creative. They've got the sound already made but they are choosing where to put that sound. That's their creative aspect into ....the creative input into it. They say 'I can see that, I can hear that, and that might fit there'. That's how they are being creative. (S, male, teacher, panel)

While the majority accepted the ready-made loop as a valid component in the creative process there were a small number of pupils who dissented. One pupil talked of the music being: 'not really [mine], because the sounds are already there', hinting that 'original' input was missing. This led another pupil to want the addition of 'real instruments' as opposed to ready-mades. He wanted to 'put in a little flute there or a little violin....' although it was unclear who would

play in these 'real' sounds. The fact that the loops were available to all led another pupil to worry about plagiarism as in: 'Some people might say "I know [where] you got that from" and other people might say, "you copied this"...' (Andre, pupil, School 1). Another pupil suggested that the music she was envisioning might not be available in the loops: 'like, you might think it in your head, but they might not have it there [in the loops]...' These responses suggest that notions of the 'original author' in the creative field are still part of some pupils' cultural consciousness. They may also be part of the normal discourse of the music department of the school where 'real music' is expressed in live performance activities. In School 1, where the task only involved using loops, the lack of recording facilities linked to GarageBand influenced some responses. As one pupil stated: 'we are not allowed to use the microphones.' Another pupil felt that the process was complicated stating: 'you can't sing into GarageBand....I think you have to use the live room and then transfer it.' However, as we have seen, School 2 did offer the pupils an opportunity to perform with GarageBand. While live recording into the programme is possible, the technical limitations of the classroom may exclude it as a possibility and replicating recording studio conditions in large whole class environments remains problematic. But clearly the opportunity to record live vocal work along with the loops would have expanded the opportunities for some pupils to gain more ownership of the outcomes. As one pupil stated:

> If you had a voice recorder, so for example if you said 'oh well done' or something like that, you just talked into it, then you could record it with the music. (Mark, pupil, School 1)

It should be restated that the dissenting statements regarding the creativity offered by the new technology were very much in a minority (see Appendix 2. Table 7). Most pupils and teachers considered that the choice and manipulation of blocks of musical sound was a creative process. As will be discussed in the next chapter this was confirmed in the value that pupils placed

on the musical outcomes. The adding together of 'musical bits' to make a 'collage' of sound generally pleased the participants. And it all resulted in something new. As one pupil said:

> Well, we've tried to fit it together and we've added like little vinyl scratches to make it like unique... And I think it sounds good...(Hannah, pupil, School 2)

4.6 – Conclusion

In a recent paper on creativity in schools Craft posits that:

> It seems incontrovertible that educational futures need both to be inherently creative and also to enhance the creativity of children and young people – and of the adults who work with them (Craft, 2008: 11).

The research described here suggests that the new technology is able to enhance the creativity of children. It appears to promote learning, supports and develops creative thinking and confers ownership. Unfortunately, the research also suggests that teachers may not be suitably prepared – both culturally and musically – to teach for creativity, or have the time to develop their own professionalism in relation to creativity in the classroom. It also points to a number of problematic confusions surrounding the role of creativity and its relationship to learning.

As we have seen in previous chapters the new technology does not always promote the learning implied in the National Curriculum. The use of the term

'composing' appears distant from the 'creativity' that makes use of the new technology. It is interesting to note that the participants in the GarageBand research did not mention 'composing' in the their responses. Rather they talked of their activities as 'making' and 'mixing'. Moreover, the context for the learning in Schools 2 and 3 – rap and mash-up – inhabited musical worlds where musical borrowing and reuse are commonplace.

This leads us to the issues surrounding the lack of musical performance and authorship. The research suggests that many pupils accept the validity of ready-made musical materials. However, as we have already noted, what many pupils do not possess are the musical performance skills to articulate musical ideas. In addition to this, pupils may find that they do not have the musical ideas, or building blocks of creativity, to begin with. One is reminded here of Harvey's 'dynamic library' (Harvey, 1988). Here the jazz musician has a shared vocabulary of musical phrases – blues licks, riffs, chord sequences, and so on – which she uses dynamically when improvising. These are, in effect, a catalogue of musical loops which pre-exist in the musician's head and instrumental technique. The same could be said of other types of music be they classical, folk, or rock. This is the rucksack of ideas that the experienced musician carries around with them. Contrary to the notion of creative 'inspiration', these ready-made ideas are often creative starting points. However, pupils starting out on their creative musical journey have no such rucksack. Hence the beginning teachers in the survey felt that providing starting points was an important part of their role in fostering creativity, even if providing such starting points tested their own creative musicianship.

This research suggests that programmes such as GarageBand can supply these starting points. As already noted, the choices are vast in some respects and possibly narrow in others. Nevertheless, the outcomes of the pupils' choice – the music they 'made' and 'mixed' – seemed to the majority to 'belong' to them. The processes and outcomes allowed them creative expression with materials and

processes that were recognisably drawn from their everyday lives. It allowed them to make choices with materials drawn from familiar contexts and yet also enabled them to fashion something new that they felt had their imprint. . In this respect it accords with Willis's call for a 'common culture' and 'grounded aesthetic' that acknowledges the musical lives of the pupils (Willis, 1990). This does not need to be original or accord with value-laden notions of artistic merit. However, the new technology does allow all pupils, irrespective of musical skills and understanding, to access musical making. Even though they may be non-performing musicians it allows them to demonstrate their musicality. It can also serve to promote creative musical learning within and beyond the curriculum. In doing so it might begin to address and encompass the four themes that Craft maintains may guide the creative educational future. These are:

> **Pluralities**: How can educational futures reflect the breadth of places, activities, literacies, ethics and opportunities for play, learning and socialising that currently exist and which seem likely to expand?
>
> **Possibilities**: how can educational futures reflect multiple possibilities at the level of the classroom and the organisation, in terms of student and teacher choice, access, ways of learning, community and involvement?
>
> **Playfulness**: How can educational futures support the exploratory drive of children and young people in both actual and virtual spaces, and acknowledge evolutionary change in play-oriented identity associated with non-linear, empowerment-oriented digital space opportunities?
>
> **Participation**: How can potential educational provision harness, recognise and reward cultural mores that characterise the engagement of children and young people in online spaces which feature democratic playful, dialogic engagement? (Craft, 2008: 11)

Chapter 5: The new technology and value

5.1 – Introduction

This chapter looks at the new technology in relation to value and assessment. Hence the research questions addressed in this chapter are:

> In what way can the outcomes of the new technology be valued and assessed? Do the pupils value the processes and outcomes of the new technology? How might teachers evaluate pupils' work that is located in a technologically mediated setting? What criteria might be used to evaluate the musical outcomes of the new technology?

Loveless suggests that when interrogating 'questions about the conduct of assessment for creativity with digital technologies' it is important to 'evaluate both the process and the product' (Loveless, 2007: 5/6). We have already seen in previous chapters that the process of creating music with GarageBand has generally been considered by the participants to be a productive and engaging one. This chapter looks at the way teachers and pupils valued the emerging musical outcomes of the work.

Conferring value on educational processes and outcomes is a tricky business. It can easily be hijacked by a range of vested interests and applied in a variety of questionable contexts. The chapter begins by outlining some of the tensions and trends that impact upon current perceptions relating to evaluation and assessment. Unfortunately, the picture that emerges is somewhat grim. Mechanistic approaches to the 'end testing' of short schemes of work have seriously skewed musical practice in classrooms. National Curriculum 'levels' are

often applied to aspects of musical learning dominated by instrumental performance (Ofsted, 2009). This overemphasis on 'instrumental competence' (ibid.56) could be seen to lead to issues of social justice where the purpose of the assessment is:

> Not to support learning but to categorise the learner – arguably to identify what they cannot do rather than what they can do. (Gardner, Holmes and Leitch, 2009: 8)

The thesis has already discussed the fact that there is great inequality with regard to young people's access to instrumental tuition and skills. Hence, how we value pupils' actions in music classrooms must take account of their many differences including their current skills, their socio economic background and their cultural location. If schools cannot do this effectively they will perpetuate what Reay claims is the 'zombie stalking English schools: social class and educational inequality' (Reay, 2006: 288).

In this chapter I probe how the focus of value and assessment may change when we ask the pupils what they 'think about' the music they are making. This type of measure is rarely used in music lessons. As already stated, pupils are assessed on 'what they can do' as opposed to 'what they think'. However, this measure of what the pupils 'value' seems crucial. If pupils endorse the activities and their outcomes then this will validate and enhance the learning. As we shall see, Csikszentmihalyi's concept of 'flow' (Csikszentmihalyi, 1996) offers some possible conceptual starting points for the development of a pupil-focused set of criteria which can gauge creative engagement and its outcomes.

The teachers' views on value and assessment follow. This begins by probing the way teachers valued the actual process of teaching and learning with

the new technology. For all the teachers concerned this was the first time they had used the software in the general Key Stage 3 music lesson. Hence their reflection on the process is of interest. They then respond to questions relating to how they assessed the pupils' work. The tension between the confines of the task and the imagination and skill of the pupils' engagement return us to issues discussed in the last chapter, namely: what are pupils learning when they are being creative?

The chapter concludes with a close look at five of the pupils' musical pieces. After making some general points about the work in each school I provide an illustrated commentary – drawing on graphics from GarageBand, audio and movie files - of the five outcomes. This is followed by an analysis of evaluations of the same pieces by a group of four serving music teachers who, after listening and looking at the music, graded the pieces and developed a set of criteria to support their response. The issues arising from valuing this type of work emerge in the course of the analysis.

5.2 – Tensions and trends: value and musical creativity

> If we wish to discover the truth about an education system, we must look at its assessment procedures. What student qualities and achievements are actively valued and rewarded by the system? How are its purposes and intentions realised? To what extent are the hopes, ideals, aims and objectives professed by the system ever truly perceived, valued and striven for by those who make their way within it? (Rowntree, 1987: 1).

The above statement reminds us of the central importance of assessment and evaluation in the curriculum. However, it was made before the onslaught of

assessment and testing that is a current feature of today's schooling. As Curtis says:

> We've become obsessed with league tables. We make lists of favorite foods, top ten Christmas presents, the worst theme tunes ever and, for the past 16 years, we've been hooked on primary school league tables: lists of top scoring schools, the most improved, and the "value added" tables. (Curtis, 2007)

Torrance has charted how, during the 1970s and 1980s, the emergence of testing and standards was driven by political pressure and ideology. This was partly due to genuine lack of evidence regarding national educational standards at the time. However, it also demonstrated how education had become politically charged in the light of rising youth unemployment and the demise of Britain's 'old' manufacturing industries. More importantly for the education profession, the 1980s saw a shift in political thinking which emphasized the importance of the consumer over the producer with the consequent undermining of the teacher:

> By the 1980s teachers, and educationalists more generally, were no longer seen as autonomous professionals legitimately contributing to debate and development, but as an obstructive, self interested producer group which had to be brought to heel. (Torrance, 2002: 4)

While the national testing regime appears to have driven up educational standards recent evidence suggests otherwise (Harlen, 2007). Moreover, the development of 'high stakes' assessment has resulted in a number of undesirable effects – for example: pupil and parental stress, the undermining of teachers morale and professional standing, the categorisation of schools into winners and

losers. Furthermore, it has taken place in an unequal society which favours the middle classes. Gewirtz's critique of the 'culture of achievement' promoted by the New Labour government of recent years suggests that an alternative and more appropriate approach to ascribing value in education is required. This would involve doing three things:

> First, it is necessary to problematize the middle-class values that are etched into New Labour's policy documentation and pronouncements and think more carefully about which of these values should be universalised and which of them should be challenged....Second, there is a need to dismantle the disparities of wealth and power and the heirachies which structure schooling and employment that are largely responsible for the differential ability of middle-class and working-class children to succeed at school. And finally we need to develop decision-making structures and curricula which engage with and give voice to the diverse experiences and perspectives of working-class children and parents as well as their middle-class counterparts. (Gewirtz, 2001: 376/7)

There have been a number of initiatives in recent years which have attempted to move away from the 'hard' concept of assessment outlined above. These have included the 'Assessment for Learning' movement (Black et al., 2003), the 'Every Child Matters' agenda (DCSF, 2008a), 'Personalised Learning' (DCSF, 2008b) and the 'Social and Emotional Learning' initiative (DCSF, 2007). These approaches – in contrast to mechanistic testing – place the process of learning and the needs of the child at the forefront of practitioners' thinking. They also attempt to broaden the concept of ascribing 'value' to pupils' actions and outcomes. For Sefton-Green 'evaluation' may have something to do with 'making a judgement about' and 'assessment' has something to do with 'quantifying the amount of'. While he admits that there is no definitive division between the labels he nevertheless feels it is important to make a distinction in

the light of the 'increasingly centralised control of formal assessment procedures by the state.' (Sefton-Green, 2000: 4).

For educationalists working in the arts it is important to be clear about the factors that may colour assessment/valuing practices. For example, Sefton-Green poses the following questions in relation to 'evaluating' the arts: In the arts do we value the product or the process? What of the place of the perceived audience and the value ascribed by the student? How can we take account of the subjective and cultural assumptions of the assessors? When and how will it take place? Will the pupils be ready? How might we avoid the assessment 'bottleneck in the education process' where 'too little data is made to stand for too much interpretation'? (Sefton-Green, 2000: 7)

The ascribing of 'value' in music education has always been closely linked to the musical processes of the European tradition. As Green points out:

> Until recently, musical ideologies have suggested that classical music lays the claim to the greatest value by possessing transcendent qualities such as universality, complexity, originality or autonomy (Green, 2003: 264).

Green's 'until recently' rightly alludes to the challenges – from academics and practitioners – that have been made to this assumption of value. Nevertheless, the ideology is still very much part of the 'hidden' and not so hidden curriculum of school music and is evident in the work undertaken in School 1 (discussed below). Moreover, the current Edexcel GCSE syllabus devotes 50% of its areas of study to 'Western classical music' covering the period from 1600 to the current day. By contrast 'Popular music' gets 25% as does 'World music' (EdExcel, 2009).

As we have noted, teachers' musical backgrounds and training have had much to with the continued promotion of performance within classical contexts (Hargreaves et al., 2003). This can be seen in the National Curriculum document for music (QCA, 2007), which has remained virtually unchanged since its introduction in the 1990s. As we saw in Chapter 2 the emphasis on performing 'with increasing control of instrument-specific techniques', the need to 'practise, rehearse and perform' using 'staff notation' and even the need to sing 'unison and part songs' all suggest the world of the orchestra and choir. Add to this the need to 'analyse', and to 'listen with discrimination' and we get a picture of musical academe – all performance and analysis of the 'best' sort of music. As Green points out, referring to the original publication, the 'cultural assumptions' of the document suggest an emphasis on the 'Western classical tradition' – for example, of all the musical areas listed in the breadth of study section it is the only one that gets detailed and specific mention (Green, 2000).

Indeed, the rhetoric of 'musical performance' in both the classical and the alternative traditions appears to lie at the heart of what is valued in musical learning. This is important, for as Sefton-Green points out:

> A key element of making sense of our educational system then, is how subject disciplines define ability in their subject; that is to say, how students' progress can be measured and recorded to demonstrate control over a particular field of knowledge (Sefton-Green, 2000: 2)

The rhetoric of musical performance perceives of the 'human' performer in a 'live' interactive context with other 'human' performers, where the sounds are produced and expressively channeled by the performer through their instrument or voice. Even recent approaches that challenge the classical tradition (Green, 2001; Green and Walmsley, 2006) maintain this rhetoric of performance, albeit in a broader stylistic context. While not wishing to denigrate or dismiss such

approaches it is difficult to see how music creativity that utilises the new technology – from which the traditional performance element might be missing – could be valued. If the GarageBand work discussed below is to be properly valued then a rhetoric involving musical performance won't serve. Even outside the educational field – for example popular music – greater value, sometimes in the guise of 'authenticity', is ascribed to 'bands' which perform 'live' as opposed to those who rely on the studio and technological support. (Keightley, 2001) As Knight points out assessment is a 'moral' activity. He suggests that what we choose to assess and how, shows starkly what we ultimately value (Knight, 1988). This research – dealing as it does with the non-performing musicians handling ready-made materials in a technological setting – seeks to analyse how teachers and pupils value the process and outcomes.

With so much emphasis on performance in musical learning it was initially difficult for music educationalists to ascribe value to composing when it became part of the GCSE exam in England and Wales in 1986. Exam boards took on the difficult role of trying to define criteria for the assessment of creative work. The notion of grading creative work sat uneasily with music teachers' immersion in the European tradition and led to much debate. In addition, a number of commentators (Green, 1990; Green, 2000; Byrne, MacDonald and Carlton, 2002) explored the problematic nature of placing value on pupils' creative musical outcomes. Criteria relating to originality, musical complexity and style posed a number of problems, and tensions existed between teaching to the test and the true promotion of creative response. These still exist. For example, a recent examiner's report stated:

> Many of the moderators reported the continued practice of 'composing by numbers' or 'template compositions' where the teacher has dictated how each part of the composition is to be organised. This practice stifles creativity and potential and results in a series of unimaginative 'cloned' compositions. (Edexcel, 2006a)

This statement overlooks the fact that many composers learn their art by writing 'in the style' of other composers. Moreover, the examiner's appeal for 'creativity' and 'imagination' somewhat ignores the context of ordinary 16-year-old pupils doing examination coursework in music classrooms. Nevertheless, Paynter appears to agree with the tenor of the examiner's statement when he questions whether we compromise the curriculum, and stifle creativity, by making important what is easily assessable, as opposed to assessing what is deemed to be musically important (Paynter, 2000).

Others have attempted to grapple with the problem of assessing musical creativity head on. Green, for example, outlines 'three evaluative axes' in relation to the evaluation and assessment of music as a media art. The first axis relates to 'contexts' which might be characterised by the ideal types of 'musical notes' – the musical materials of the piece and 'social contexts' – the social significance of the piece. 'Criteria' is a second axis which may be formulated according to 'limited' criteria sets relating to the individual piece or 'universal' criteria by which we try to evaluate any type of music. Both these are problematic. The first is based on 'a cultural and aesthetic relativism....which suggests that any piece of music should be judged within its own terms, and cannot be legitimately be said to be better or worse than any other piece' (Green, 2000). The second set of universal criteria often involves an implicit and unexamined assumption of the superiority of certain styles. This leads to a third more realistic axis of 'individual pieces and whole styles' in which we evaluate individual pieces in terms of their musical style and by comparison with other pieces that go to make up that style.

Perhaps in response to the confusion surrounding assessment, the revision of the exam syllabuses in 2002 (EdExcel, 2002) saw a return to more clearly defined formal approaches drawn from the classical tradition. The exam also attempted to acknowledge the growth of the new technology and its impact on youth culture, even though not everyone was in agreement about the

legitimacy or value of the music. For example, a GCSE music examiner's report commenting on the submitted 'Club Dance Remix' compositions stated:

> Sadly, it was more common that this topic was attempted by the weaker candidates, who resorted to using programmes such as 'eJay' and 'Acid'[33] and their own input to the compositional process was minimal and questionable. The associated briefs too were often poorly done and gave no indication as to how the piece was created (Edexcel, 2003).

This statement includes a number of assumptions which may tell us as much about the examiner as it does about the perceived shortcomings of the pupils and teachers. It is important that we question those assumptions while investigating the validity of the new technology in relation to musical creativity. A central question for this research was how teachers and pupils value the process and products of the new technology and how these 'fit' current assessment assumptions of the music curriculum and exam syllabuses.

Ascribing value to the creative processes and outcomes of the new technology requires careful consideration and could lead to different ways of valuing engagement. Csikszentmihalyi's concept of 'flow' or 'optimal experience' applied to discovery and invention, suggests a criteria set which is based in the participant's experience (Csikszentmihalyi, 1996). He maintains that to achieve a 'flow' state, a balance must be struck between the challenge of the task and the skill of the performer. If the task is too easy or too difficult, flow cannot occur. Following on from this the flow state implies a kind of focused attention and engagement. This might suggest the development of 'consensual assessment techniques' which could assist in the 'subjective' nature of assessing creativity (Byrne, MacDonald and Carlton, 2002). The authors cite Amabile's development

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[33] 'eJay' and 'Acid' are early loop based sequencer software programmes which enable the assembly of pre-recorded musical loops or musical fragments

of assessment methods which are grounded in a consensual definition of creativity. For her the 'agreement' of what is a creative outcome is important:

> A product or response is creative to the extent that appropriate observers independently agree that it is creative. Appropriate observers are those familiar with the domain in which the product was created or the response articulated. (Amabile, 1996: 33)

Assessment in its many guises could be seen as driving the current curriculum. When this supports and progresses the learning of pupils then its presence is justified. However, not all assessment procedures do this. Given their dominance in current educational thinking we should strive to question the intention and hidden assumptions surrounding assessment. Sheridan and Byrne suggest the following problematic areas in relation to the assessment of creativity:

1. That the premise that standards will rise with improved exam results is flawed;
2. That assessment (increasingly) drives teaching and learning;
3. That creativity is measured using flawed criteria;
4. That the logistics of assessment result in teaching and learning time being lost;
5. That musical creativity is being stifled [by assessment] (Sheridan and Byrne, 2002: 142)

We also need to remind ourselves that we require teachers who know their pupils and their subject if assessment is going to serve learning. David Best in his discussion of the 'free expression' debate - which he characterises as: 'the conflict between those who emphasise freedom of expression to allow unrestricted individual development, and those who emphasise the discipline of

an activity or subject'(Best, 1992: 74) – reminds us of the need for teachers who possess informed and sensitive judgement:

> This is why there can be no substitute for high quality teachers who are able to judge the time and methods appropriate for intervention, and the teaching of disciplines, so that individual potential in students is fulfilled, not inhibited. (Ibid: 85)

However, not everybody agrees what a 'high quality' teacher is, or if they are really a requirement in the creative musical learning of pupils. We shall return to the contested area of the teacher's role in the next chapter.

5.3 – Pupils' value and the new technology

In Schools 2 and 3 I attempted to find out how pupils valued their music making. This was explored by asking the pupils: 'What do you think of the music that you make with GarageBand?' The initial question was followed by supplementary prompts which included: 'Do you think it is real music?' and 'Would you let your friends hear it? (see Appendix 1c) There are difficulties in asking pupils what they feel might be 'real' in any given musical context. However, as we have seen in Chapter 3, pupils do evaluate the 'sound'of classroom music and set it against the music they hear in the world outside the classroom. Hence this was an attempt to gauge the music's authenticity in the eyes of the pupil alongside gaining some sense of their feelings in relation to its communicable value (Negus and Pickering, 2004). As we shall see below the teachers were aware of the potential for sharing pupils' work through mediums such as the mp3 file and the Internet.

Hence the questioning pattern analysed in this section is outlined in the following exchange:

WC: What do you think of the music that you make with GarageBand?

Elle, pupil, School 2: I'm very proud of it. I like it. I think it is really good. I listen to other people's and theirs' are completely different to ours but they still sound really good as well.

WC: So you wouldn't mind other people hearing it?

Elle: No. I think I would like them to hear it to see what they thought about it.

An analysis of coded responses show that the majority of the pupils asked viewed their music in a positive light. Of the 33 coded responses 27 were unequivocally positive, 5 expressed some doubts and 1 was negative. (see Appendix 2, table 8) The positive responses referred to the music as 'really good', 'pretty pleased with it' and 'happy with it'. Some went further and talked of linked home contexts such as:

Ellie, pupil, School 2: Yeh. I'm really proud of it. I really like using it. When I play it to my Mum and Dad they are really proud of me. I just feel happy!

WC: And do they play it to relatives and friends?

Ellie, pupil: Yeh. When Gran and Grandad come over I played it to them, and they're pleased.[34]

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[34] One is reminded here of the cartoon, seen in chapter two, of the young boy conducting the electronic keyboard.

Others felt a degree of surprise at their own invention as in the following:

> ...when you actually kind of listen to it you say: 'I can't believe I did that'. I'm so proud of myself...(Sarah, pupil, School 2)

Another pupil spoke of the issues surrounding pair work and creative choices when she said:

> I think it's really good. I think that ours has turned out quite well. Because, we argue quite a lot over it. 'Cause she likes one type of music, I like the other, and we've got to try and make them go together. And so... but it turned out quite good actually...(Lottie, pupil, School 2)

Of the minority of pupils who were more ambivalent some thought the music was 'okay' and 'alright'. Sometimes this was to do with the fact that they felt it was not quite 'good enough' as in:

> Ariana, pupil, School 3: I don't really like it. It's okay...
>
> WC: So would you be happy to let other people hear it?
>
> Ariana: Once I improved it...

Another response suggested similar reservations, this time owing to things having gone wrong:

> Yeh (laughs) but that is just probably because of what we are doing. Ours isn't very good because it got deleted and we had to do it again and it went sort of wrong. But it is getting better...(Meliz, pupil, School 2)

Interestingly, in contrast to the pupil who wanted her family to hear her work another pupil made a clear distinction between parents and friends as in: "Yeh, probably my parents. Not sure about my friends'. Only one response felt the music was not 'real'. When pressed the pupil said: 'No. It's not the best but it's okay...it's different [from real music]'.

While there may be problems in pinning down what pupils 'mean' when they say something is 'okay' or 'good', it seems clear from these responses that the pupils generally valued their musical outcomes. The most negative comment stated that the music was 'different'. Contrast this with the type of comment made in relation to the more traditional music lesson which included: 'embarrassing', 'boring' 'annoying' and 'rubbish'. There is no way of verifying if any of these appellations were just or appropriate to the previous types of learning. However, the fact that this vocabulary was absent from the narrative relating to value and the new technology suggests that pupils conferred value on their own musical interactions with the software. In terms of 'assessing' the pupils this type of 'output' was overlooked. The fact that the pupils felt positive and engaged with the work could have been seen as a measure. As suggested above Csikszentmihalyi's concept of 'flow' (Csikszentmihalyi, 1996) could serve as a starting point in developing criteria that gauged the pupils' sense of their own involvement. Here the engagement of pupils could be measured against their sense of 'clear goals', 'lack of distraction', self-confidence and engagement (ibid.). This type of approach is also mentioned in the recent Ofsted report on music that suggests that 'musical progress' can be seen in a number of ways including 'attitudes toward music lessons' (Ofsted, 2009: 50). Here they suggest that teachers should probe if pupils are 'enjoying the work' and 'are fully engaged'. Ofsted also suggest monitoring involvement 'outside of lessons' and

'continued study' (ibid). Although not part of this research the teachers in schools 2 and 3 reported that pupils had been inspired to attend a lunchtime technology club and had opted in greater numbers to take music at GCSE level.

5.4 – Teachers' value and the new technology

For the teachers there were two main areas relating to value and assessment – how successful they thought the scheme of work had been, and how they might value or assess the pupils' musical outcomes. Here is the response from the three teachers in relation to the success of the project:

> 'They did understand what they were meant to do. And in a funny way more clearly than they do when they work in the other area. I think if it is very prescriptive and very clear then they get it and they did seem to get it in this project.' (N, male, teacher, School 1)

> 'Pretty successful. Yes. I thought it was very successful, actually. I liked being able to do quite a lot of different things with the software. So, you know, sequencing, teaching them skills if they want to go on to GCSE, possibly. Inputting. You know the different processes of listening, using different loops, creating songs. And being able to create a song whether they can play anything or not. You know that is really good. And then performing with it. I thought that was...I'd like to do more of that...' (C, female, teacher, School 2)

> 'I thought it was successful...Yeah; I am going to be doing it again after half term. I'll say 90% - I'll be generous – enjoyed it and they got something rewarding out of it and they liked the idea.... By merely

walking around and listening to their pieces and then having it performed at the end and getting everyone's opinion, what worked, what didn't work, the constant assessment of it...and the pupils liked that because you are bringing an element of the performance.... into play there.' (Y, male, teacher, School 3)

These comments suggest that the teachers valued the GarageBand work as effective learning. Children grasped the tasks, the software offered range, the pupils were engaged and they enjoyed the activity. The possibility of range was also mentioned by a member of the teachers' panel, who suggested that:

> I think those people who are good at music, who have really sort of worked at it, that still comes through because they've got a deeper understanding, deeper knowledge and it helps them work on a higher level (M, male, teacher, panel)

The teachers were planning to do the work again, possibly putting in place some refinements such as 'a little bit of tweaking' or links with other areas of the music curriculum. One teacher envisaged putting the GarageBand creations with more traditional practice such as 'improvisation on the blues and that kind of thing'.

However, when it came to assessment criteria that might grade or 'level' the pupils' work the teachers had more difficulty (see Appendix 2, Table 10). Teachers found it 'quite hard actually' and sensed that what they were doing was 'very subjective'. One teacher questioned their 'own value system' when making judgements. When pressed the class teachers mentioned criteria areas that were related to the task so that 'judgements' were made according to the 'rules you set out initially'. As already hinted at some of these criteria were drawn from the world of the European classical tradition. Hence teachers talked

about the 'form' and 'structure' of the music. All three projects displayed structural elements. However, two schools had chosen forms – 'rondo' and 'binary' – strongly associated with traditional classical contexts. Another associated 'classical' context was the 'family of instruments' that has its genesis in the symphony orchestra. So in School 1 these areas supplied the criteria as in:

> They had to...remember the form, each section had to be different - ABCD had to be from a different family of instruments either from the orchestra or world music... and each of those sections had to be 8 bars long. So those were the three main assessment criteria. (N, male, teacher, School 1)

This statement acknowledges the fact that the pupils' interpretation of 'instruments' went beyond the confines of the traditional orchestra. We shall see in the musical analysis that follows that this limitation led to some imaginative fusions. Of course, if the criteria are only drawn from the 'rules' embedded in the task then areas such as skill and imagination might be overlooked. This 'ticking the boxes' led a member of the teachers' panel to overlook the more imaginative interpretations of the task. He said:

> Well there was more going on in the second one. But... I was so bogged down with the structure. I mean the first one (FAJ) was 'that was A, that was B, that was A....' And it went on and I thought 'that's great'... the sounds, you said they had to use instruments, families of the orchestra... I thought, 'right they've done a string one they've done a woodwind one, they've done a brass one...' Everything was boxed off very nicely so you couldn't really argue with the criteria... (M, male, teacher, panel)

This tension between meeting the demands of the task while making allowance for innovation and imagination is a problematic area. For example, this next

quote suggests that a pupil might produce something very musical and yet be seen to fail:

> You have to have assessment criteria worked out in advance. What can happen is you get a child who has produced something which is actually very musical and very pleasant to listen to, but has not addressed the task. I think you have to be quite cruel sometimes... (W, male, beginning teacher, School 1)

In creative work getting the balance between the confines of the task and realisation that goes beyond the task is a great challenge. Teachers recognised that there were 'different levels of creativity' and that 'some samples worked better together'. It was also recognised that in some of the pupils' work the elements were 'mixed better'. This hints at technical competence in using the software – for example, knowing 'how to' balance and position the sound – but it also includes musical response. This didn't surface as an issue in the projects researched here. However, the value accorded to aspects of technical competence – the gloss of professionalism, if you like – might need to be considered in future work.

It is clear that trying to assess the 'creative' elements in a pupil's work is problematic. None of the teachers in the research alluded to the fact that these were 'pair' efforts. Hence the attempt to gauge individual input was difficult, if not impossible. However, they were clear that they wanted to promote some sort of subject based learning through the activities. This contrasts with the views expressed by the beginning teachers in Chapter 4 who sensed that un-delineated 'life skills' would be a learning outcome. For example, the teachers here would not accept random response, what one teacher referred to as 'throwing a bunch of stuff together'. Rather they marked according to the task set and added something for 'creativity'. For example:

I think what we did was I marked them out of 10 or 20 or whatever, and I gave them a certain amount of marks for getting each of those things in place, or nearly in place. But I also gave them some marks then for creativity within what they have done. Again that's a little bit subjective but we peer marked it. (N, male, teacher, School 1)

I did not observe or catch sight of any of this 'marking'. However, in all three schools there was a degree of ongoing formative assessment practices which revisited the task, set goals and provided 'in progress' models. One teacher implied that 'marks' were inappropriate. Rather she conjured up the 'grade' in a more impressionistic way. For example:

> Value-wise, in terms of the 'holistic' value... you know it was very much about when they came up and performed it, and how they did it and how they felt about...my impression of.... how they felt about their song. And whether they were proud to come up and do it or even if they weren't enjoying performing over the top of it. That sort of sense of... you know they did feel quite good. Most of them felt quite good about what they had created. So that probably 'steered' my overall grade. (C, female, teacher, School 2)

This teacher was dealing with class sizes of over thirty pupils. She had devised an effective scheme of work and the pupils' response was positive. However, it was clear from observation that she did not have the time to monitor, assess and provide feedback on pupils' work 'in progress'. Hence, the end of project performance, valid as it was, served as the basis for assessment. We are reminded here of Sefton-Green's 'too little data' being 'made to stand for too much interpretation' (Sefton-Green, 2000). In a busy school day teachers

struggle to 'assess' their pupils' work. It often leads to arid and time consuming grading exercises which detract from music making. As Ofsted report:

> Music teachers during the survey were struggling to find workable ways to collect assessment information and to meet whole-school requirements for data, especially where these were excessive. For example, in the most extreme cases, the music department was expected to provide assessments every half-term in relation to sub-divided National Curriculum levels. (Ofsted, 2009: 31/2)

Of course, the 'whole-school requirements' for data are driven by bodies such as Ofsted in a process that, as previously mentioned, attempts to drive up standards through 'high stakes' assessment.

Over and above the statutory requirements to provide local and national data should we be bothering about value and assessment in relation to the new technology? I think we should. As Swanwick says:

> It is undeniable that our perception and response to music is influenced by the position it is seen to occupy in a value framework. (Swanwick, 1988: 90)

Given that programmes such as GarageBand challenge the current 'value framework' of the National Curriculum we need to make an argument for the value and validity of this type of musical engagement. For example, Ofsted suggests that musical progression should be seen in many different ways when they state:

Music education should help each pupil discover the way that he or she finds easiest and then, increasingly, help pupils to apply their musical understanding across all the different musical experiences. In the secondary schools visited, overemphasising instrumental competence acted as a ceiling on achievement for many students who, in fact, could achieve the highest levels through demonstrating their understanding in other ways. (Ofsted, 2009: 56)

This appears to be a laudable sentiment. However, it is at odds with the requirements at GCSE. While Key Stage 4 is beyond the brief of this research we still have to acknowledge that its presence exerts a powerful influence on the Key Stage 3 curriculum. Most exam boards do not accept loop based composition, or the use of ready made musical materials. For example, the new OCR[35] GCSE syllabus states that for sequenced performance:

> The piece must be all the candidate's own work - no use of pre-programmed loops or samples are allowed (OCR, 2010: 75).

While exam boards are making efforts to accommodate some aspects of the new technology it is still an unclear and contested area. We are also reminded here of the examiner who felt that only 'weaker candidates' attempted a genre implicitly associated with ready-made sounds. Such perceptions have to be challenged, and perhaps this can be done best by teachers valuing, assessing and framing pupils' work. As Swanwick reminds us: 'to teach is to assess, to weigh up, to appraise; in order to adequately plan for, and facilitate, a richer response' (Swanwick, 1988: 149).

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[35] Oxford, Cambridge and RSA Exam Board

Part of this involves effectively framing the pupils' work. We have already seen that the teacher in School 2 provided a 'live' audience for the pupils' end of scheme performance. However, there are other ways of sharing work. For example, Baxter's work, mentioned previously, disseminated his pupils' work in the form of mobile phone ring tones (Baxter, 2007). The teachers involved in the research were also aware of this growing possibility of an 'e-audience'. For one respondent this involved the pupils wanting to 'burn CDs and take them home'. Other pupils 'got theirs up in MySpace' and the music department also provided a web site for sharing. This respondent added: 'you keep and value their work and let them show it to a greater audience'. For the pupils it was 'something to be proud of'. While the framing of work in this manner is still quite distant in current curriculum work, examples of pupils' music sharing sites such as 'numu' (numu, 2010)provide a model for future possibilities in this area.

5.5. – Valuing the new technology: pupils' musical outcomes

In total there were fifty-one musical outcomes produced during the period of the school-based research. They were retrieved as GarageBand files which I then placed and played back on my own computer. As I have a matching set up of software and loops, the transfer was relatively painless. However, issues relating to missing loops and software did arise on occasion. GarageBand can also 'write' the files to mp3 file. The examples and excerpts provided in the appendices are presented in audio CD format or DVD 'movie' files (see Appendix 3 and 4). Obviously there are too many files to analyse in detail. So I intend to make some general points – illustrated by short extracts – about the overall musical response in each research school setting, and then look at five 'complete' pieces in some detail. I shall also consider the responses made to the music by the teachers' panel who also listened to the same five pieces.

One of the reasons for doing this analysis is to see at close range how pupils musically manipulate the new technology. In doing so I hope to interrogate the affordances of the technology in relation to musical choice and creativity. In this sense I am, along with the teachers' panel, evaluating the new technology. However, the process involves making evaluative judgments about the individual pupils' final outcome. As discussed elsewhere the process is equally important, as are the other non-musical outcomes of the work – such as increased motivation and enjoyment – that might result from the process. But by analysing pieces of music I am aware that my own subjective and cultural assumptions may shape the criteria that the panel and I will use. A major concern is that the musical assumptions of the European tradition could exert an influence here, what Green alludes to as the 'transcendent qualities such as universality, complexity, originality or autonomy' (Green, 2003: 264). For example, a 'more is better' attitude might appear to be at work where complexity is valued over simple utterance. Some of the analysis suggests that 'more' layers of sound, 'more' swapping of loops, 'more' dynamic contrast, 'more' fusion of sounds and genres and so on, contribute to a 'more' creative handling of the materials. This might not always be appropriate. Some attempt to ameliorate my own views led to the use of the teachers' panel. Even though they might share similar musical identities to myself (Hargreaves et al., 2003) I would hope they represent a small but valid socio-musical group of current music teachers. For some of the teachers it was important that they knew the 'compositional brief'. So in part their response was shaped by how successfully the pupils articulated the teachers' directions. This led to interesting tensions and misreading.

The panel, with possibly one exception, accepted that creativity can be expressed and evaluated through the handling of materials which are ready made (Crow, 2006). I also believe this. Hence I have excluded from my own commentary any criterion that alludes to original utterance located in an expressive performance tradition.

5.5.1 – Pupils' musical outcomes - School 1

Recap of 'brief': To write a Rondo form piece in eight bar phrases. Each section to make use of a different set of instrumental sounds drawn from Woodwind, Brass, Strings and Percussion.:

All the pupils completed the task in some shape or form. That is, they all presented instrumental blocks of eight bars in a Rondo form of ABACADA. This in itself was an achievement. Moreover, the resulting outcomes generally presented well with high quality sounds and clear structures. Of course the pupils did not 'perform' or create the actual sounds. Rather they acted as creative listeners who assembled the musical materials into a coherent whole.

Within the overall response there was a degree of variation. For example, six of the pieces included introductions and codas. These were often added to create a sense of audience through applause and similar sound effects as can be heard in this extract:

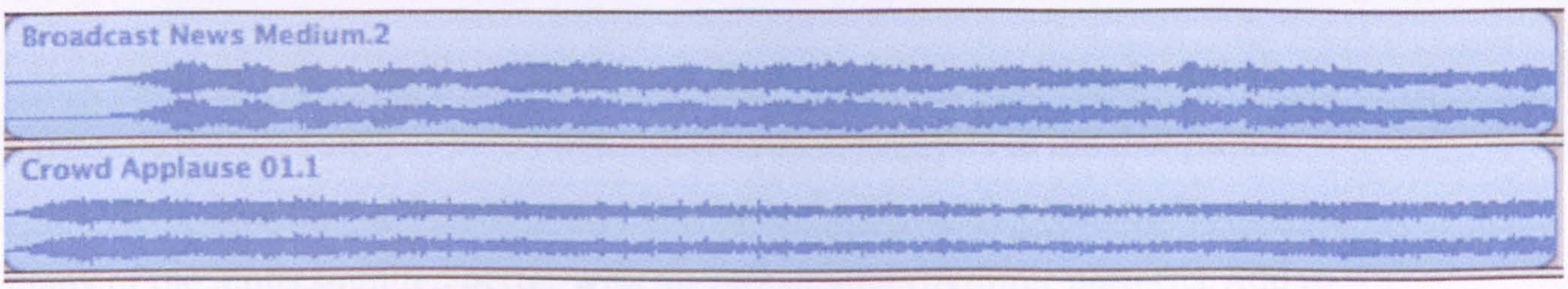

Fig. 32: CD Track 1 – from MS4 (intro), 0:22 min.

Others toyed with the sounds in a lighthearted way in some attempt to make an aural joke:

Fig. 33: CD Track 2 – from TPR (intro), 0:32 min.

Pupils for the most part felt disinclined to stick to the timbral limitations of the task. Only one piece kept to these restrictions. The main desire was to add rhythmic elements to the string, brass and woodwind sections. For example here is an extract from the 'woodwind' section from AN:

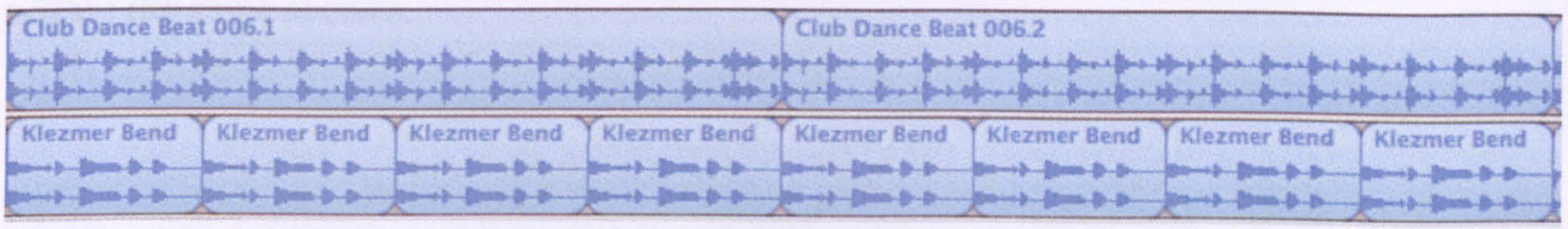

Fig. 34: CD Track 3 – from AN, 0:22 min.

In some instances these additional beats were 'grooves' that included harmonic features such as bass lines and chords. It suggests to me that pupils were often uncomfortable with music that lacked a rhythmic element. Moreover, many of the loops sounded better with accompanying rhythmic patterns. Add to this the conception of the loop as a repeating rhythmic element, with its concomitant link to dance music, and you begin to understand the pupils need to maintain a percussive element throughout. Given this, some pupils did 'escape the beat' to focus on textural effects including contrapuntal handling (see the DJ analysis below).

Pupils varied in their handling of texture. Some responses only included a single line:

Fig. 35: CD Track 4 – from JRK, 0:22 min

Others managed to layer up to four tracks at any one time. The most 'complex' work (see DJ below) managed to provide a range of textural contexts which exploited contrast and variety. Interestingly no group moved beyond four textures. Simple repetition of loops – that is, the same one bar loop repeated eight times – occurred on occasion, as in AN's Klezmer loop quoted above (see Figure 34). However, the majority of outcomes demonstrated the ability to move between loops in the same part and to set longer loops against shorter loops within the same section:

Fig. 36: CD Track 5 – from MS4, 0:22 min.

The creative choices did not extend to tempo handling. All the pieces took the default tempo of 120 beats per minute (bpm) as standard. Volume control and balance did not generally play an expressive role in the pupils' work but it was evident in some. For example:

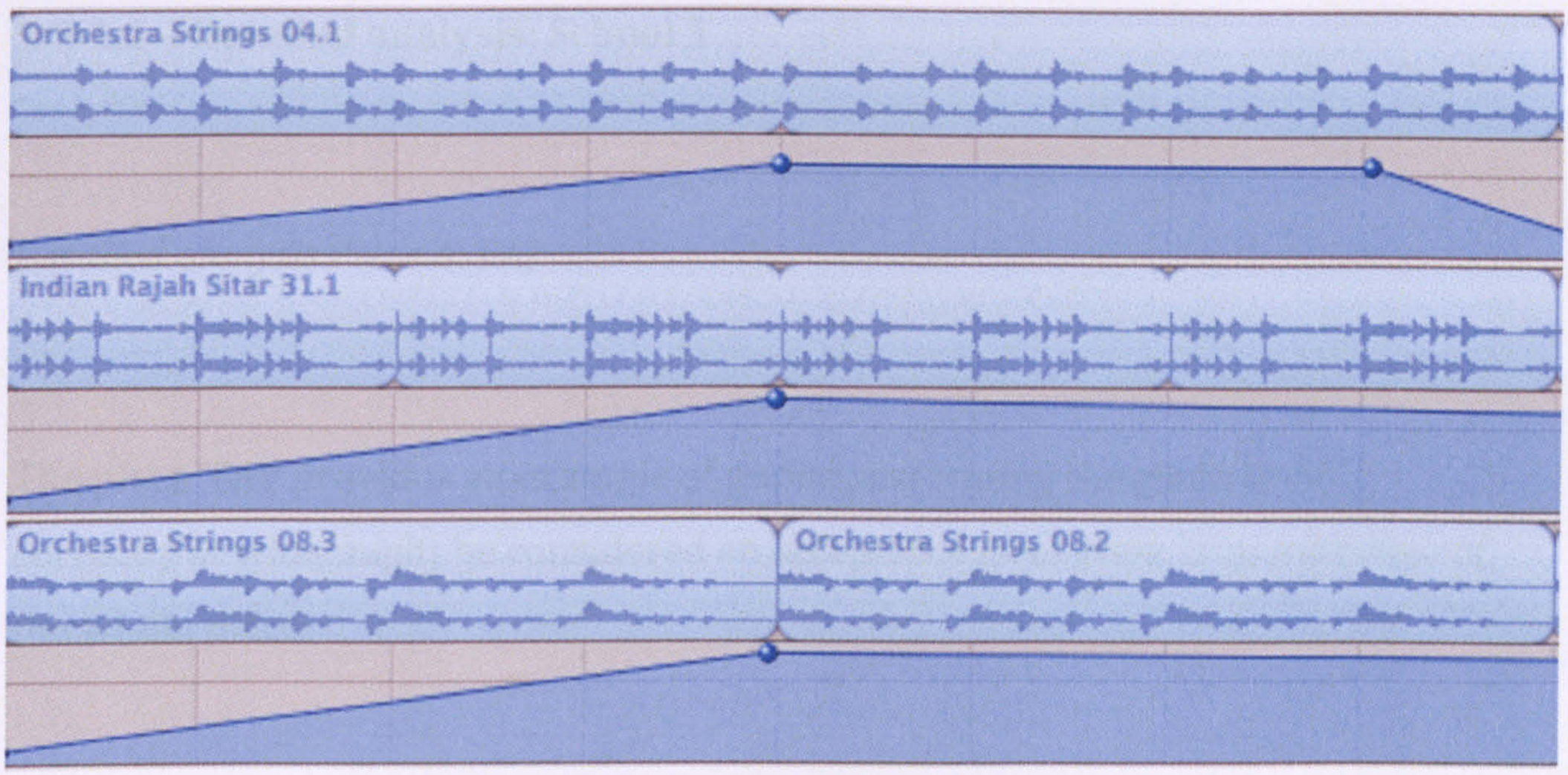

Fig. 37: CD Track 6 –from DLG, 0:28 min.

Actual mistakes in the handling of the loops were rare although one issue resulted from the use of 'midi loops'. These contain note data and are linked to a specific timbral setting. If a pupil drags these loops onto an existing virtual instrument then the resulting music can sound 'wrong', for example, a 'balalaika' part played on the 'piano' sound.

Pupils' instrumental choices in relation to the 'families' were good for the most part. They appeared to be happy to use an assortment of world music and orchestral sounds in addition to the more obvious pop/rock sounds. One apparent absence was orchestral woodwind with no appearance of standard orchestral flute, clarinet, oboe or bassoon sounds. This could have been due to the initial omission of a 'woodwind' choice in the loop browser (although this was rectified as the project progressed). On balance pupils made more use of 'world music' instruments. Perhaps it is too fanciful to suggest that the choice of 'exotic' sounds might attest to the ethnicity of the pupils and their subconscious association with world music sounds. It could also be that the sound of the instrument was located in a specific musical genre and that this influenced choice.

5.5.1.1 – Detailed analysis: School 1

Detailed analysis Piece A: FAJ

The piece 'FAJ' provides an example of pupils performing the given brief correctly at what might be considered an acceptable level. Here is an overview of the whole piece:

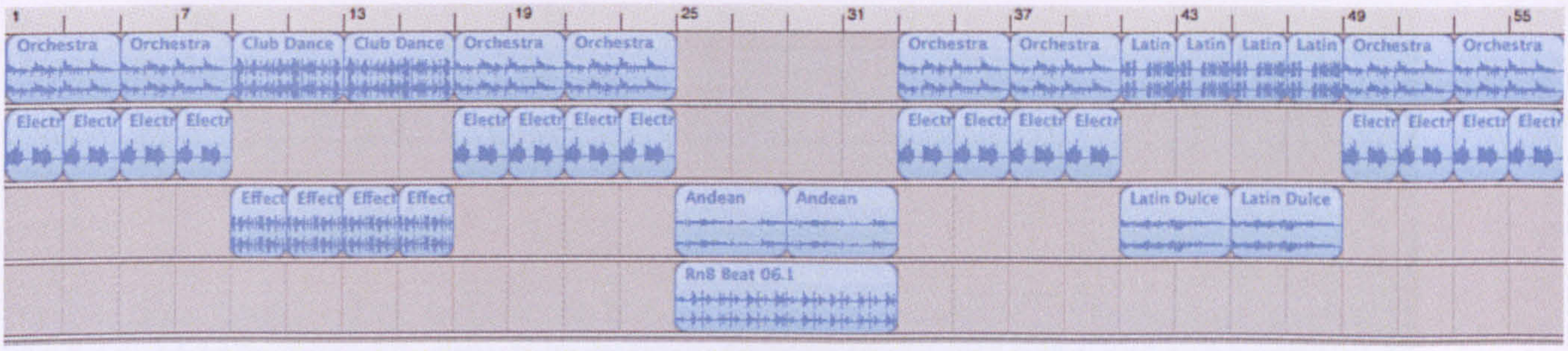

Fig. 38: CD Track 7 – FAJ, 1:56 min.

The form is clearly discernible with the following structure and instrumental allocations:

A- Strings, B-Percussion, A-Strings, C- Woodwind, A- Strings, D- Brass, A Strings

The string section uses two layers of sound: orchestral strings and slap bass:

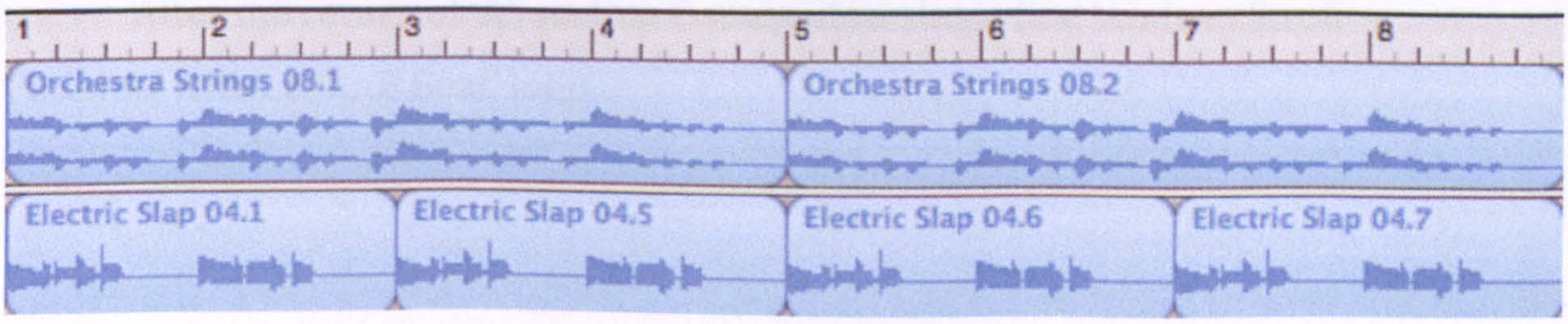

Fig. 39: Section A from FAJ

The loops are of four bar (strings) and two bars (bass) in length and are simply repeated for the eight bars. Apart from the unusual pairing of bass guitar and strings, the section meets the criteria of the family of instruments and the phrase length. When the strings return there are no changes to the instrumentation or texture.

Section B is another simple two-track affair with two drum loops sounding together.

Fig. 40: Section B from FAJ

The loops – a one-bar 'club dance beat' and a two-bar 'effected drum kit – are repeated throughout the section and, although they sound effective together, there isn't any attempt to vary the texture.

After the return of 'A', section C presents a single line 'Andean Stroll Panpipe' with an 'RnB Beat' loop.

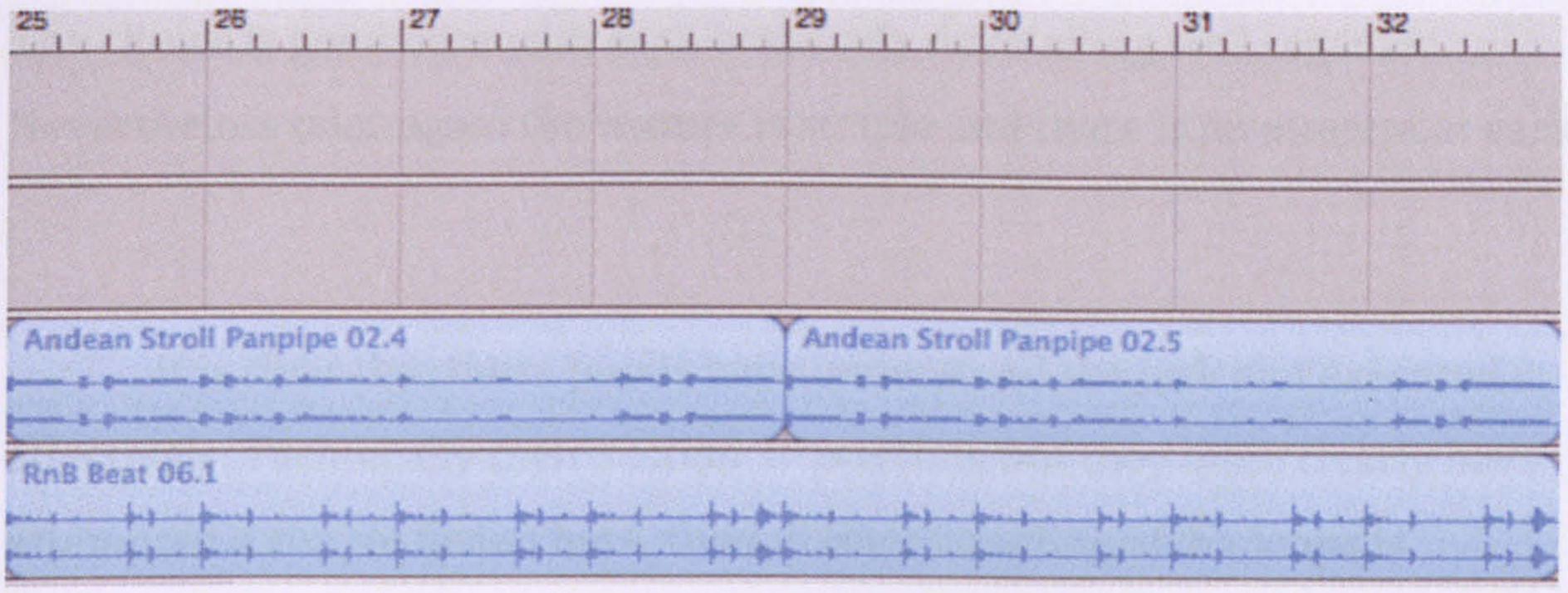

Fig. 41: Section C from FAJ

Technically the inclusion of percussion is 'incorrect' according to the task guidelines, although the 'woodwind' sound is clearly to the fore. As previously stated, the presentation of main instrumental sounds with percussion and groove tracks was quite common and in certain instances – although perhaps not this one - sounded appropriate.

After the third statement of 'A', the brass section makes use of Latin brass sounds:

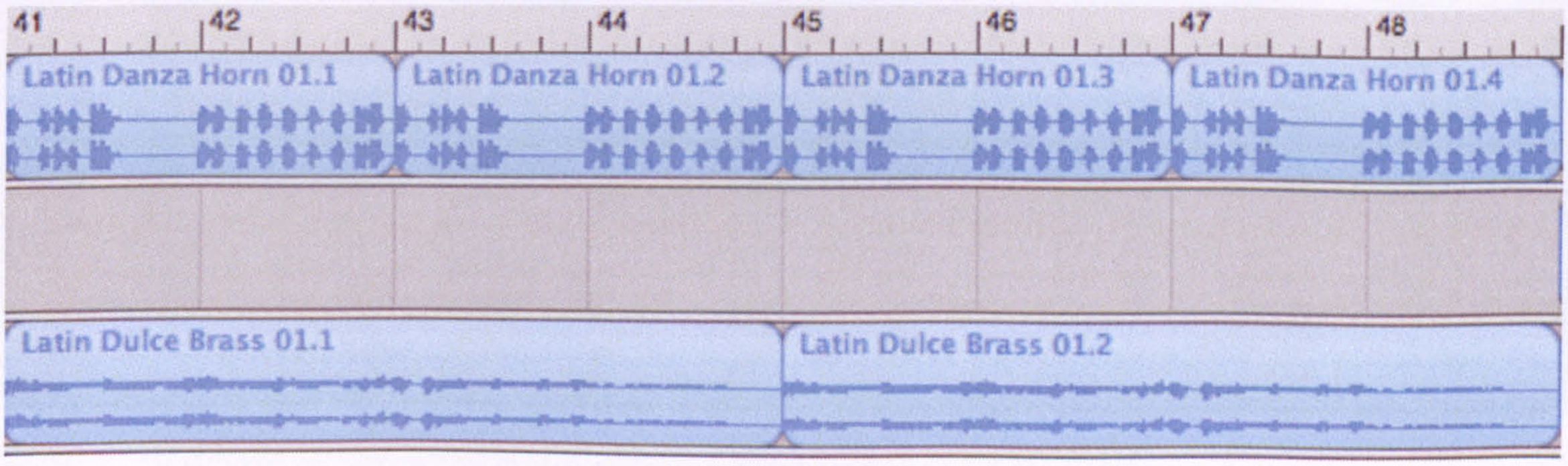

Fig. 42: Section D from FAJ

The choice is good here with both brass riffs dovetailing well together. Nevertheless once again the texture is simple and there is no attempt at variety.

It is clear that these pupils have understood the task and executed it effectively. Technically their section 'C' is wrong but they quite clearly have attempted a simple fusion here. Overall their handling of the loops is straightforward and possibly unimaginative. All the sections are simple repetitions of two textures and there is no attempt to vary the textures or frame the overall presentation of the work. The contrast between the sections does not strike this listener as particularly inspired. I would suggest that, while they have worked at a competent level, they have not handled the materials in a particularly creative way. However, the pupils did meet the brief set by their teacher. As we shall see below, the tension between meeting the brief and responding imaginatively led to some contrasts in evaluation by the teachers' panel.

By contrast the piece by DJ goes beyond the brief set and handles the materials in an extended manner. Here is an overview of the whole piece:

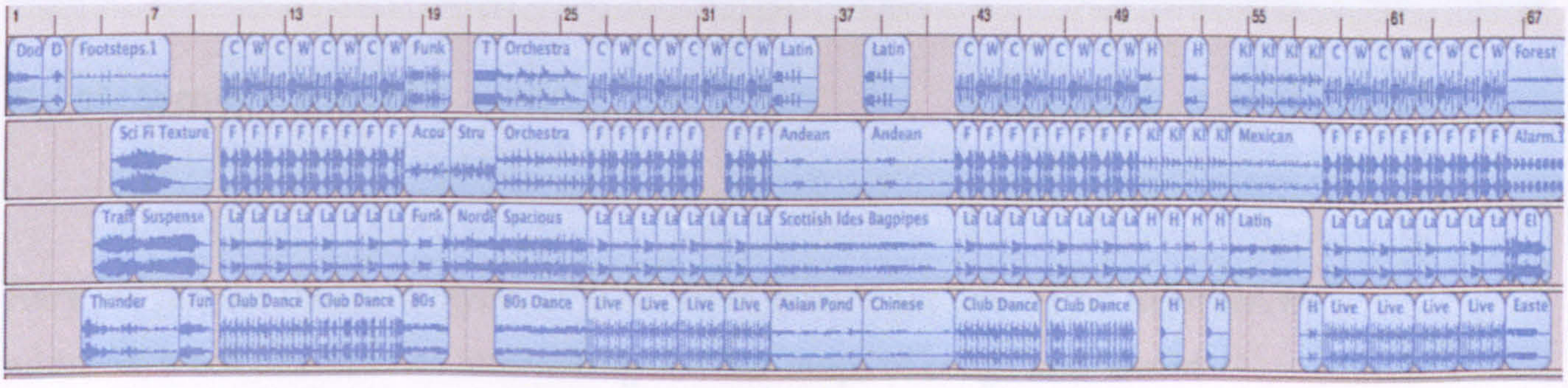

Fig. 43: CD Track 8 –DJ complete, 2:22 min.

We can see that in addition to the basic form, these pupils have added an introduction and a coda making the overall structure:

Intro, A – Percussion, B – Strings, A – Percussion, C – Woodwind, A – Percussion, D – Brass, A – Percussion, Coda.

The introduction makes use of sound effects – creaking door, footsteps, thunderclap – set against 'sci - fi' ambient sounds to create a possibly 'suspenseful' narrative. There is also a degree of humour here for the following percussion section is happy and upbeat. Interestingly this first section starts on the second beat of the bar, as do all the other sections of the piece. This might be seen as an oversight on the part of the pupils. On the other hand they may have wanted a 'pause' which allowed the introduction to fade before the dramatic entry of section A.

Section A is a more multifaceted than the one provided by FAJ:

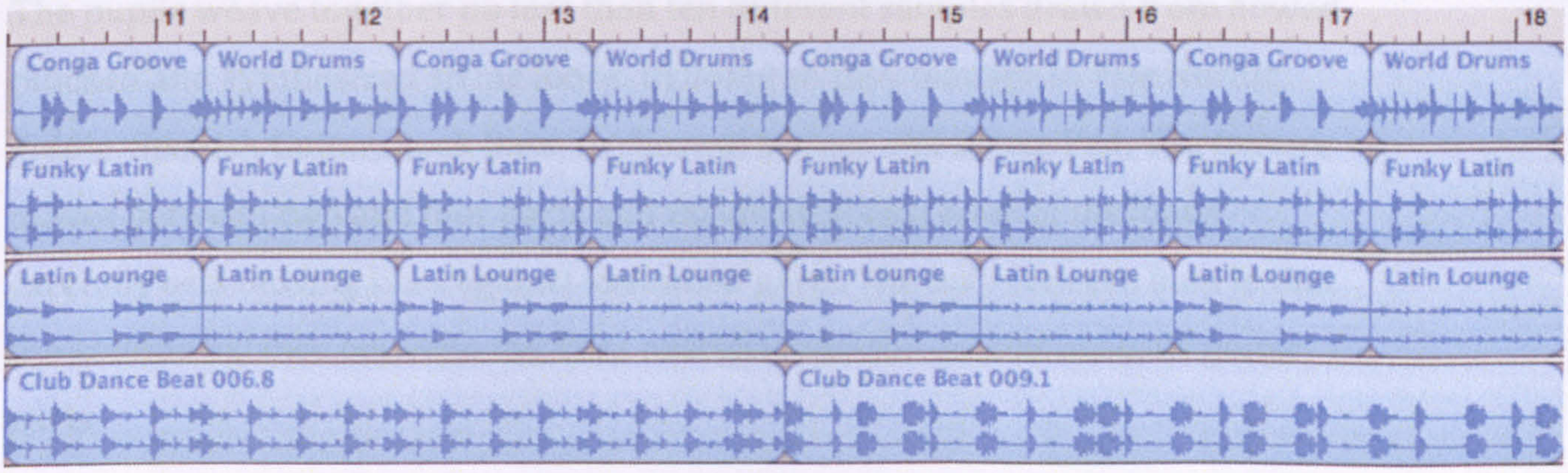

Fig. 44: Section A from DJ

Here we can see that four layers of percussive sounds are presented together. In addition, track one has two alternating one-bar loops of conga and 'world drums'. On track four the loops are presented in four-bar chunks and again alternate between two different 'Club Dance' beats. The odd 'sound' out here might be seen as track three which has a 'Latin Lounge Piano' sounding eight times. However in strict technical terms the piano can be classed as a percussive instrument.

Section B demonstrates some interesting handling of a range of string sounds.

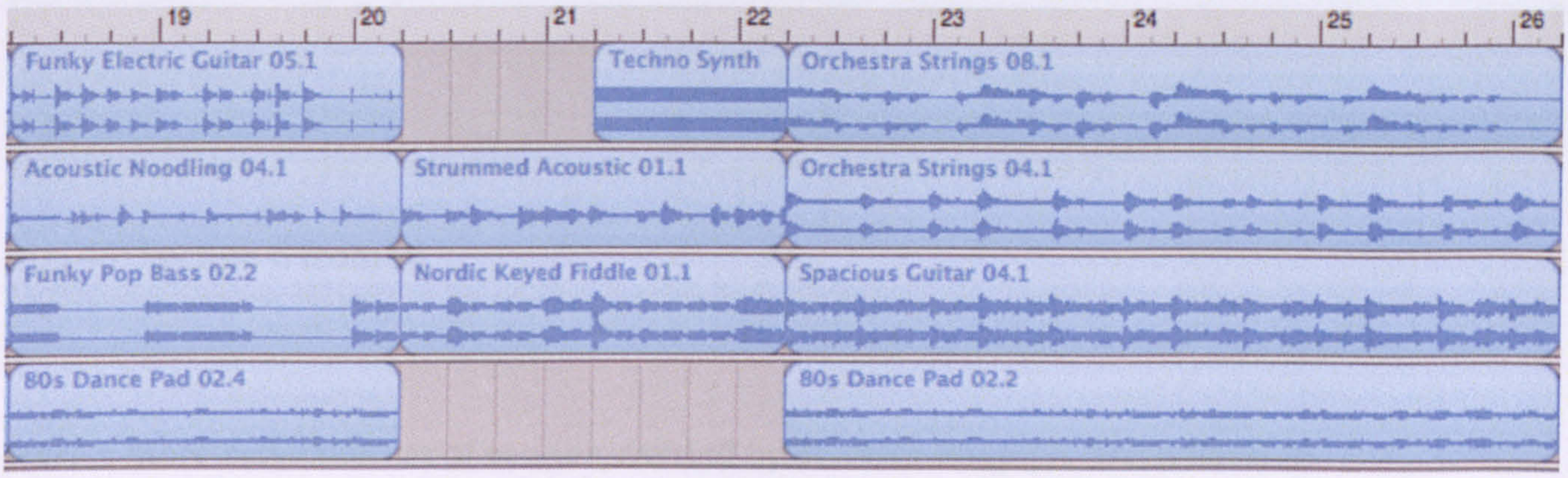

Fig. 45: Section B from DJ

The pupils weave together no less than ten different samples drawn from bowed, plucked and synthesized string loops. In doing so they manage to fuse Nordic Fiddle, Spanish Guitar, Rock Bass, Orchestral Strings and Dance Pad. The texture moves between two and four parts and the musical character of the loops carefully sets moving lines against sustained parts. The only concern here is that the volume balance between the lines overshadows the quieter acoustic guitar parts.

After the frenetic return of section A the pupils manage a change of contrast with section C.

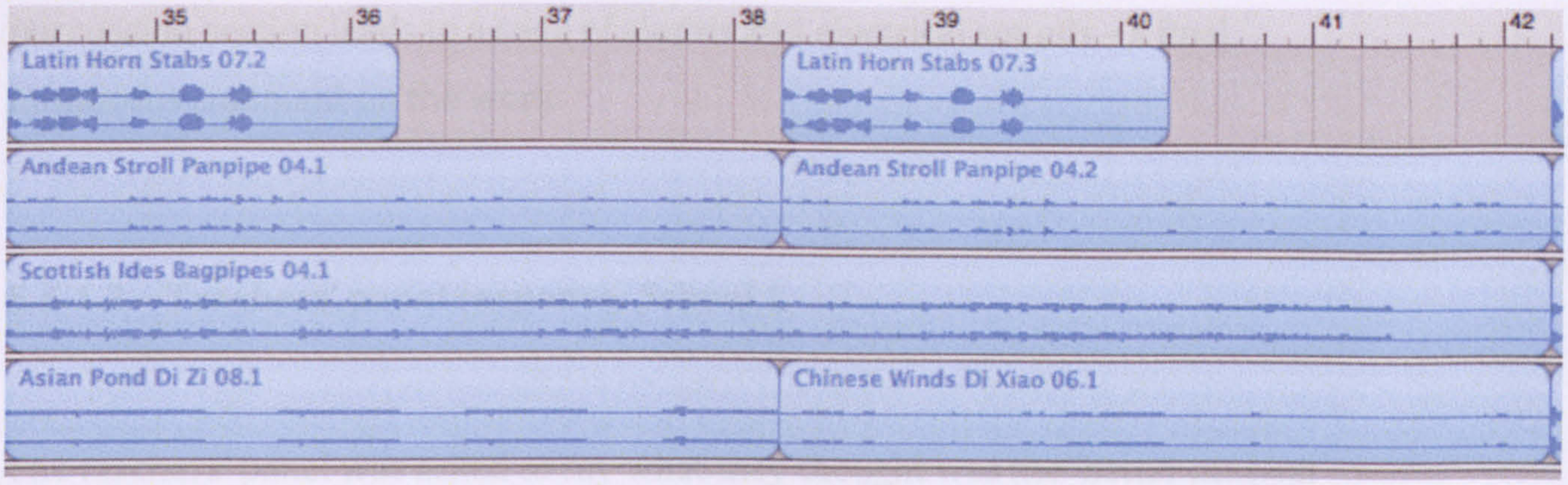

Fig. 46: Section C from DJ

Here a more reflective set of sounds, carried by Scottish Bagpipe, Asian Pond Di Si, Andean PanPipe and Chinese Winds Di Xiao are mixed together. However, somewhat incongruously, carefully placed Latin Horn Stabs on the saxophone punctuate at bar 34 and 38. This appears to suggest that the pupils can affect musical and dynamic contrast while maintaining a rhythmic feel which stylistically links with other sections.

The brass section - section D – is also handled with confidence:

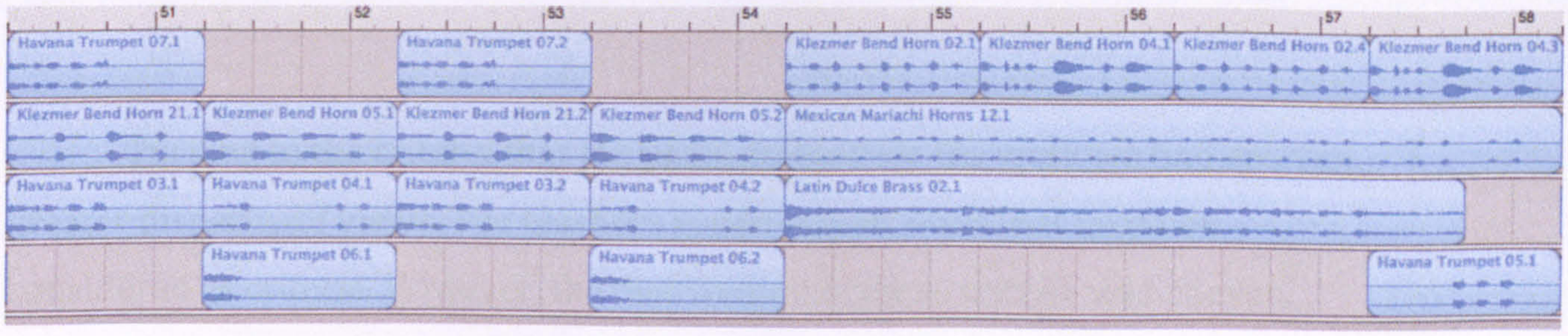

Fig. 47: Section D from DJ

The use of a range of world music brass sounds drawn from Latin, Klezmer and Mexican traditions is, I feel, well handled. The development of ideas and the use of counterpoint works well given the mixing of genres. A final return of the

percussion section leads to a coda of alarms and electrical sounds – a final humorous comment on the work.

5.5.1.2 – Teachers' panel response: School 1

The teachers' panel was asked to say what they thought was the 'better musical outcome' of these two pieces and give them a grade ranging from 5 (very good) to 1 (poor). They were also asked to suggest the 'criteria' that had led them to their decision (see Appendix 1e).

Three out of the four teachers rated 'DJ' the 'better' musical outcome. The teacher who rated 'FAJ' as 'better' said later that he was marking according to the 'brief'. He hadn't noted that DJ had gone 'beyond' the brief. The range of grades was more consistent for 'DJ' with the rating balanced between 'good' or 'very good'. However, 'FAJ' was rated across three levels, from 'fair' to 'very good'. This suggests that grading is problematic and very much dependent on the criteria. As we shall see, the teacher who thought 'FAJ' better had no criterion for creativity. Nevertheless, overall the panel's view of the pupils' work was positive with three 'very good' grades being given.

Turning to the criteria that the panel devised for the work we find an even greater disparity of views. The teachers stated eleven areas that might be considered as criteria. However, the distribution of these criteria was uneven.

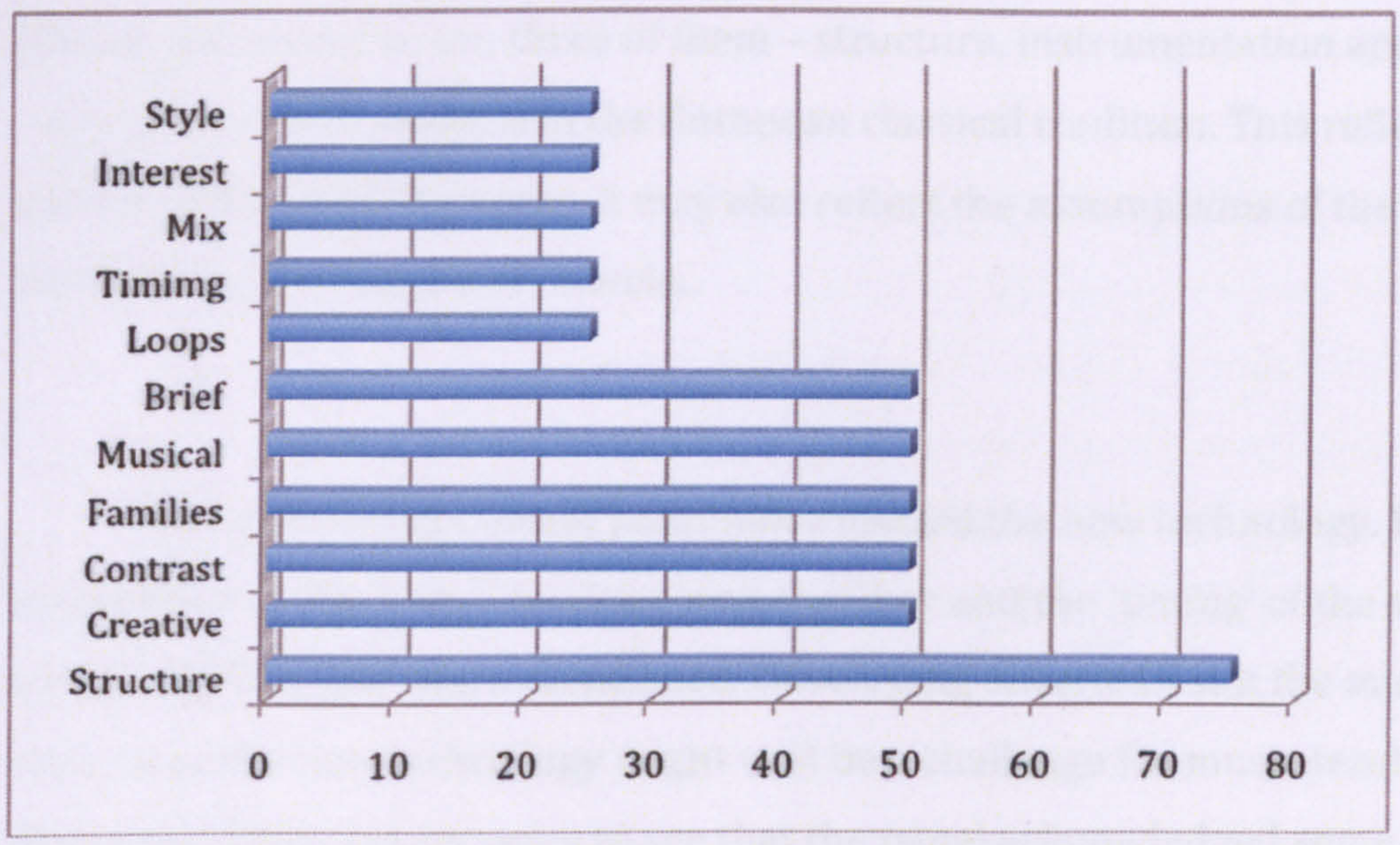

Fig 48: Teachers' panel criteria – School 1

For example, no single criterion was shared across all four teachers. The most stated criterion was 'structure', which, given the brief, was probably to be expected. However, how it was applied varied. So for one teacher the DJ track had: 'taken the idea of rondo form and extended it'. However, for another the same track was 'not clear to follow'. The following criteria got two mentions each. They were: 'brief', 'families of instruments', 'contrast', 'creative' and 'musical'. As we have already stated the 'brief' category, doing what the teacher asked, favours the FAJ track. However, the 'musical' category favours DJ. As one teacher wrote on his response form: 'musically there was more going on in DJ. They chose more sounds, they matched well, [and there was an] idiomatic use of instruments'. Clearly a concept such as 'musical' is a subjective one and difficult to apply. On the other hand a mechanistic adherence to measurable outcomes may lose sight of 'musicality'. 'Families' was a more measurable criterion and the teachers generally accepted that the predominant sound in each section followed the teacher's brief. However, the creative category was difficult to pin down. The teachers mentioned that the music of DJ was 'more interesting' and 'showed imagination'. Once again this is a tenuous area in terms of quantification but one which is nevertheless important to include. The remaining criterion of 'contrast' favoured DJ who, as we have already mentioned, varied the texture and introduced changes in dynamics. It is perhaps worth pointing out that, of the six

criteria discussed so far, three of them – structure, instrumentation and contrast – are stalwarts of analysis in the European classical tradition. This reflects the nature of the brief. However, it may also reflect the assumptions of the panel of teachers in their choice of criteria.

The remaining criteria point more toward the new technology. Here the application of the 'loops' working well together and the 'timing' of the samples along with the 'mix' were mentioned. Developing criteria to suit the musical context of the new technology might well be a challenge for music teachers. However, it was encouraging to see that the panel acknowledged some of these emerging areas of music making. On the other hand the remaining criteria of 'interest' and 'style' appear quite difficult to apply. 'Keeping the listener's interest' is obviously subjective while 'constancy of style' may be inappropriate given the origin of the loops used by the pupils.

While problems relating to choice and application of criteria exist I sense it is a worthwhile area to explore. By doing so a certain transparency could emerge which may help teachers and pupils value and improve upon their work. My own analysis, and that of the teachers' panel, suggests that the new technology in this instance allowed pupils to express their creative choices at a number of valid musical levels.

5.5.2 – Pupils' musical outcomes: School 2

Recap of 'brief': To write a Rap piece in two sections: verse and chorus. Each section should make use of alternating 'coherent' bass sounds and swap melodic and rhythmic loops. One of the rhythmic loops is to be programmed in real time by the pupils. The final rap to be performed 'live' by the pupils along with the created 'mix'.

There were thirty musical outcomes from this project, representing the work of sixty girls. They all worked in pairs and they all completed the task to a greater or lesser degree. This is quite an achievement given that the work was completed within two six week periods, involved large class sizes and contained a lot of musical detail. This may have been to do with the fact that the music teacher had substantial expertise in working with music technology in commercial contexts. The context of the school was also a factor. For the most part the girls were well behaved and motivated. As mentioned elsewhere although the groups chosen were bottom and top set there was no discernable difference in outcome. (For example the teachers' panel thought that the lower set work was actually that of the top set.) As in School 1 this project asked the pupils to choose loops according to a set of guidelines proposed by the teacher. However, it differed from school 1 in that it required performance elements at the start and the end of the project

The pupils began by programming in three short drum extracts on the bass drum, the side drum and the hi hat cymbal. These were layered on top of one another. This involved playing along with a click and 'tapping' the sounds in using the keyboard. As such it involved a degree of instrumental skill. Pupils can check their accuracy by using the grid edit section of the programme. If all went well the following grids would be displayed:

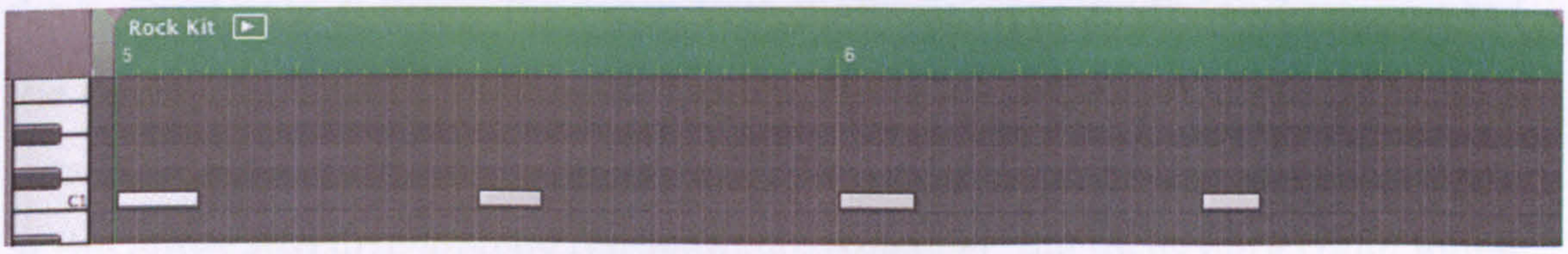

Fig 49: Bass drum grid: G and A final mix

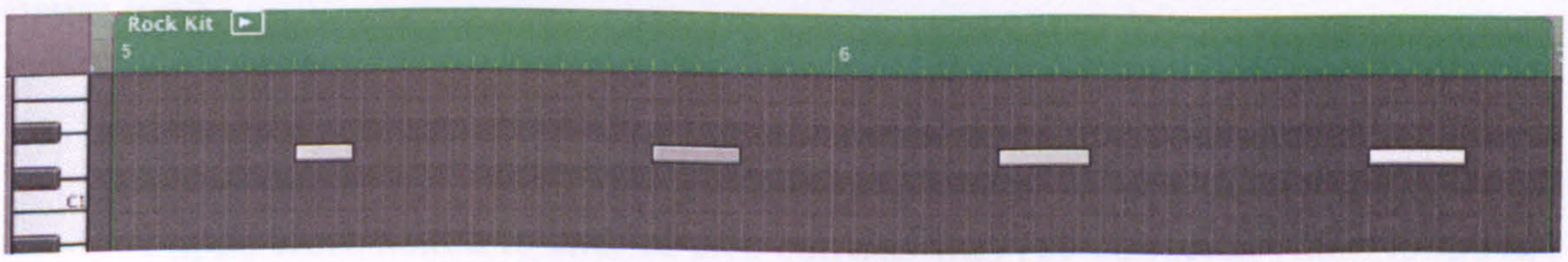

Fig 50: Side drum grid: G and A final mix

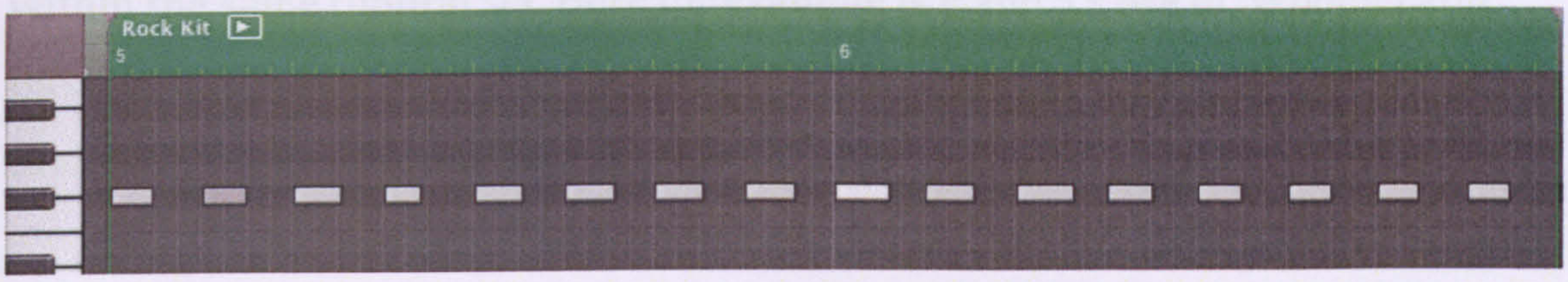

Fig 51: Hi hat grid: G and A final mix

However, a number of pupils found it difficult to achieve the correct timing. So for example, if things went wrong the hi hat pattern might look like this:

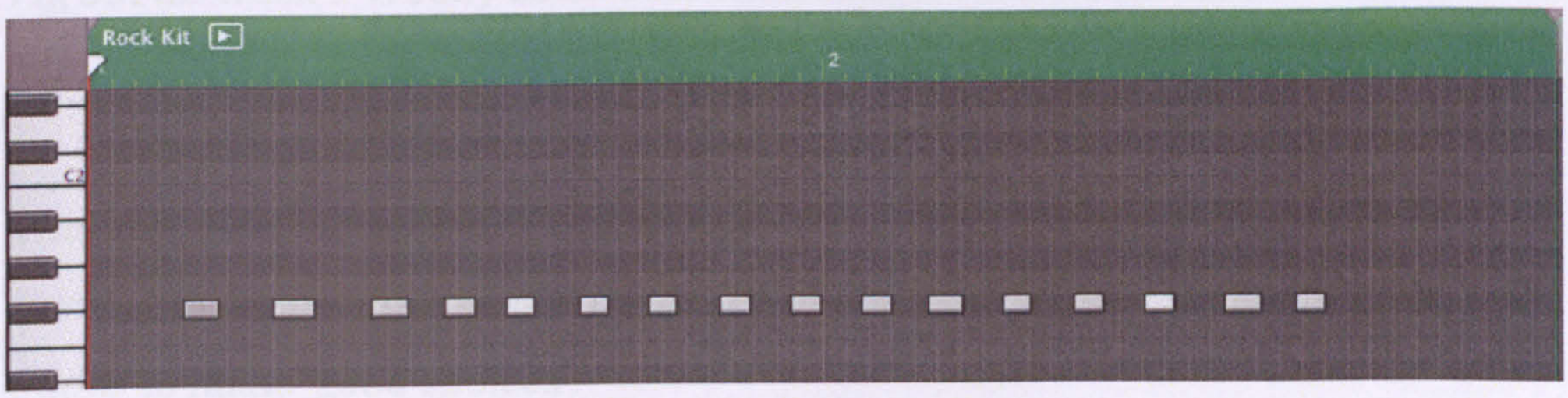

Fig 52: Hi hat 'gone wrong': E and L week 2

We can see that the sixteen quavers are unevenly distributed and need correcting. This could be done through manually 'dragging' the notes to the correct grid division or by 'quantising' the notes – automatically moving them to the nearest note division. However, both methods were 'fiddly' and interrupted the flow of the music making. Granted the visual feedback provided by the grid was helpful. In fact it was more helpful than a display of the traditional notation of the notes also provided by GarageBand. However, the focus here could move from the 'sound' of the music to the 'look' of the music. On the other hand it could be argued that the pupils were learning something of the interior workings of the drum loop.

Pupils were asked to choose two contrasting, yet 'coherent', bass loops to characterise the verse and chorus of their rap. Here the 'choice' offered by the

programme was limited by the teacher. Pupils had to find different patterns within the same timbral set. Here for example is P and S's use of 'Woody Latin Bass' as it moves from the verse pattern to the chorus pattern. You can also hear their programmed drum loop discussed above:

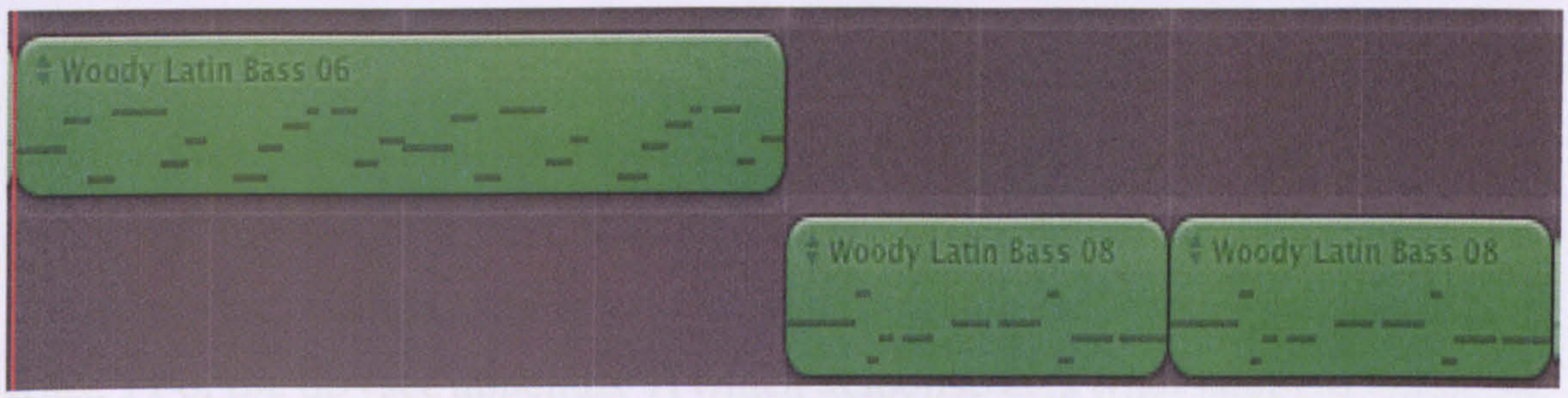

Fig 53: CD track 9 Woody Latin Bass transition from PS, 0:22 min.

This approach worked well and was used to good effect by all the pupils. It seemed to support this teacher's view that she saw her role as allowing the pupils to make 'good choices'.

Another characteristic of this work was the suggestion to 'swap' between rhythmic and melodic/harmonic loops. This resulted in verse and chorus having a distinct timbral colouring. For example, here are K and G swapping between percussive and melodic elements over a coherence 'synth' bass:

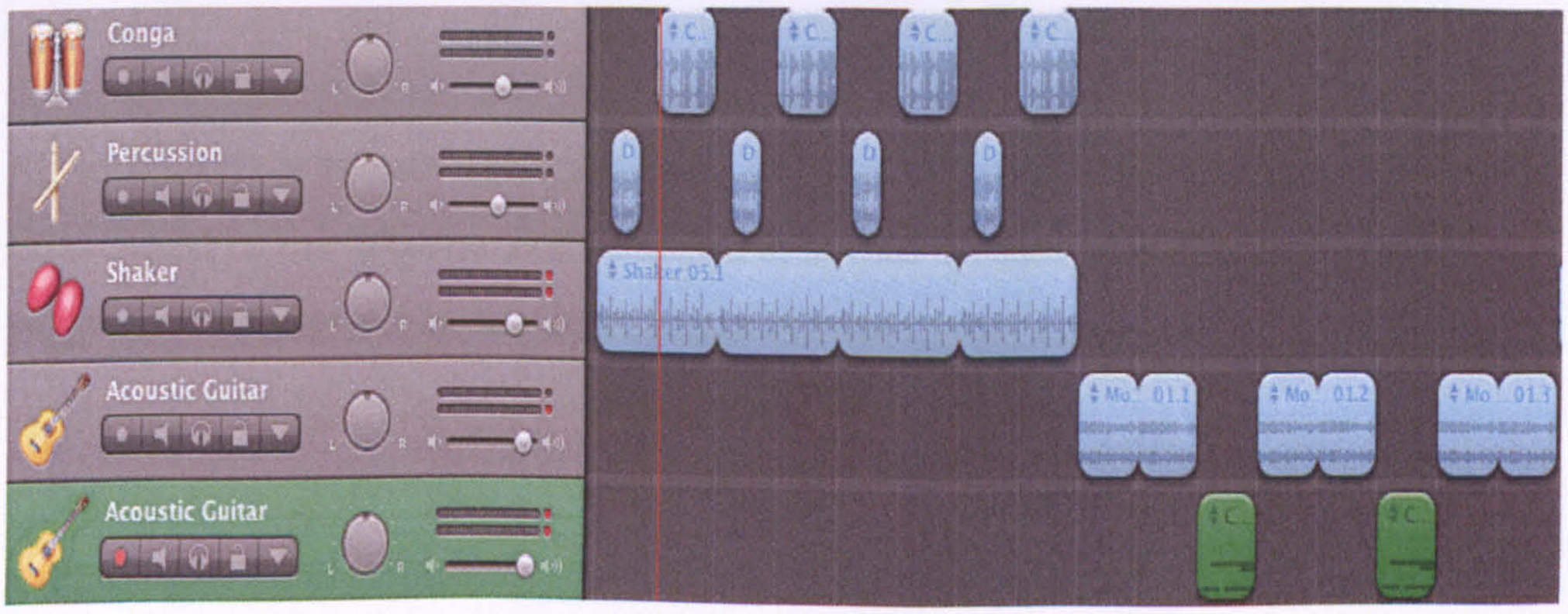

Fig 54: CD track 10 – Percussive to melodic swap from KG, 0:39 min.

Here the categorisation of the loops into types allows for clearer definition of the sections. In this case they fall into sixteen bar groupings made up of layering a selection of shorter loops.

Interestingly in a number of instances the melodic content of the loops coloured the pupils' final vocal performance. Here pupils 'sang along' with the loops and incorporated them into the interpretation of their rap lyrics. In certain instances this resulted in spoken verse and sung chorus. This can be heard on track 11 of the CD (see appendix 4) which demonstrates what happens when the pupils add vocals to Figure 53. Interestingly the waveform can 'show' where the vocalist is talking and singing. For example, here is the waveform of K and G as they move from rap to vocal:

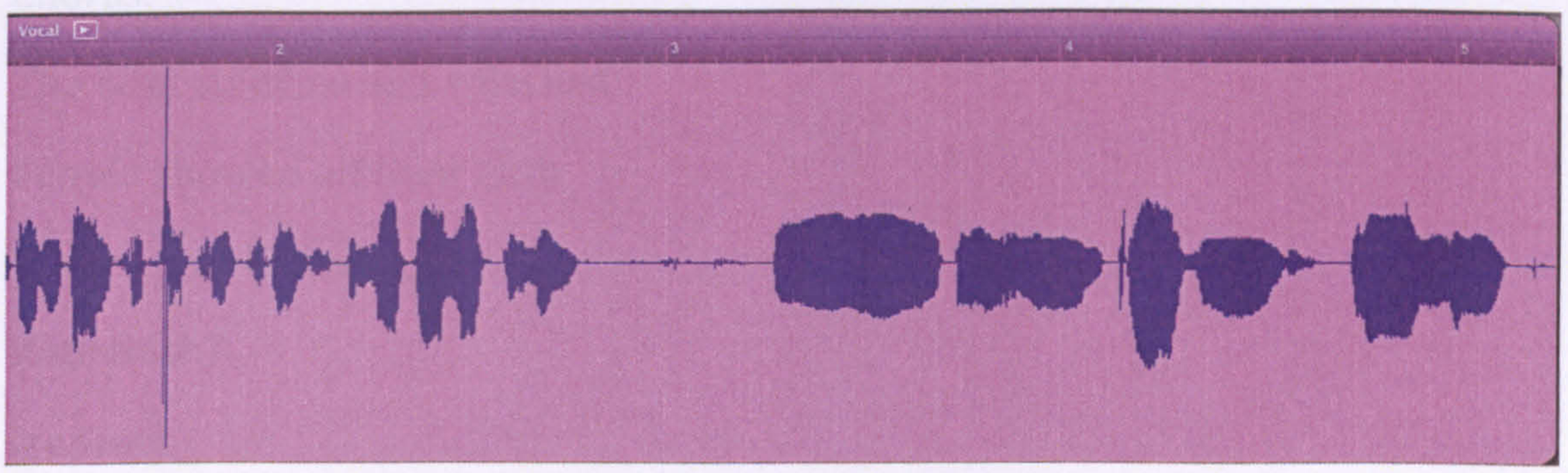

Fig. 55: CD track 12 – Waveform of talk moving to vocal from KG , 0:15 min.

Although this attribute of GarageBand was not exploited in the scheme of work it does attest to the 'alternative' notation of sound discussed in chapter 3 and suggests that there is future learning potential in this area.

5.5.2.1 – Detailed analysis: School 2

J and L produced a piece of music that met all the criteria set out by the teacher. After a short introduction the music is presented in four sections of eight bars making a pattern of verse, chorus, verse chorus. The lyrics focus on 'travelling' by water and read as follows:

Verse:

I tumbled into a boat

Had a big lump in my throat

It went so fast, wouldn't be last,

Skimming across the sea.

Chorus:

The boat splished and splashed

People showed off their cash

While I was listening to

Kate Nash?

(repeat)

Verse:

We come close to the beach

Splash water on my cheeks

The boat that won the race, you oughta see my face

When we finished skimming across the sea

Chorus:

The boat splished and splashed

People showed off their cash

While I was listening to

Kate Nash?

(repeat)

What is surprising about this piece is the symmetry of the work. Looking at the whole piece on the GarageBand screen also demonstrates this:

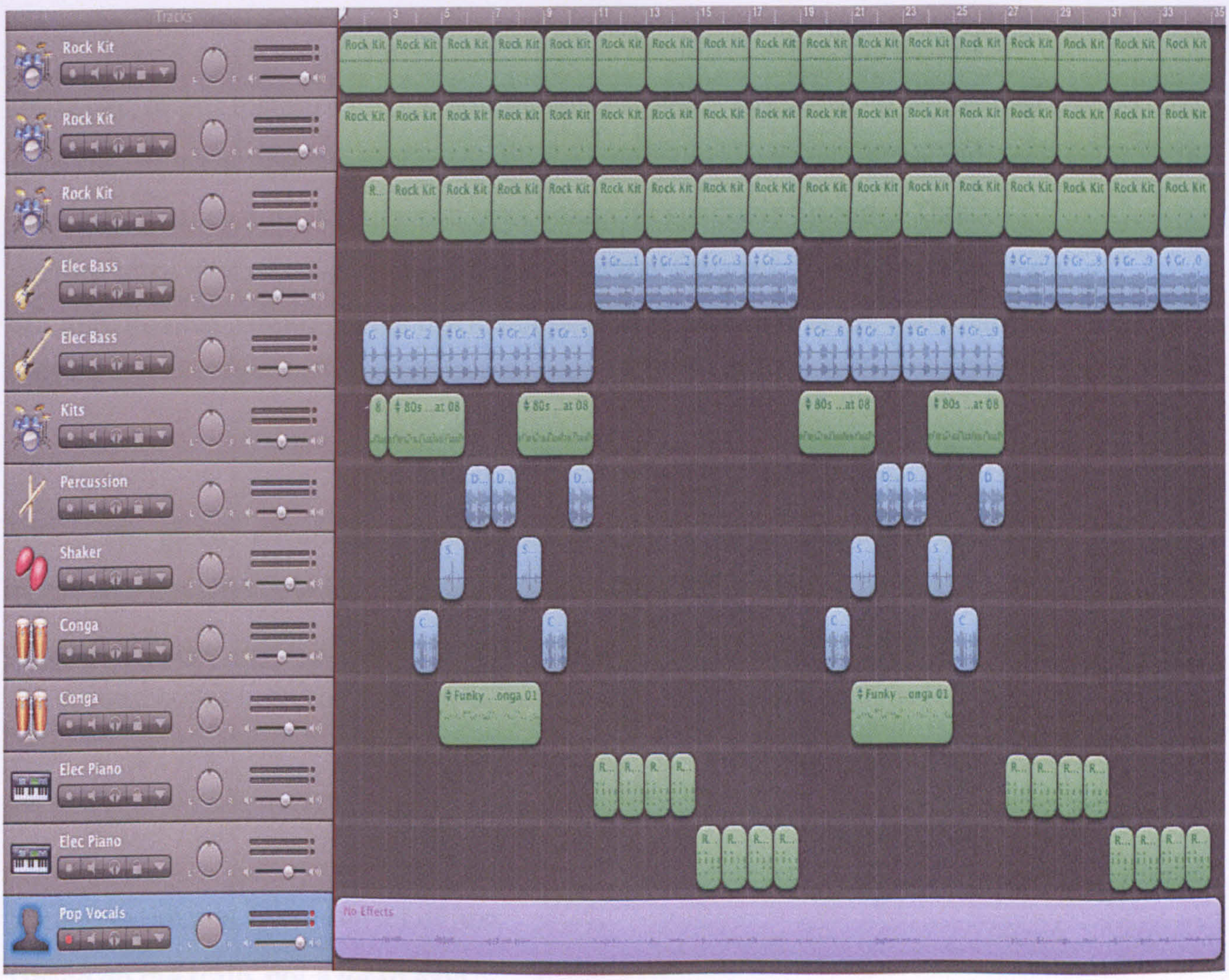

Fig. 56: CD track 13 – J and L complete, 1:09 min.

After a two-bar intro the verse and chorus pattern are replicated exactly. This is probably the result of using the copy functions of the programme. GarageBand can copy individual parts and whole sections of music. The programmed drum loop (i.e. top three tracks) is also copied throughout the piece and runs constantly in the background. While this allows for quick construction of the music it could also lead to indiscriminate repetition of parts. Having said this, a feature of hip hop and dance music is its 'trance like' repetitiveness. The choices of percussion have a 'world' music colouring and make use of djembe, shaker and conga. This swaps with melodic elements provided by electric piano. The coherence bass is drawn from the groovy electric bass category.

Like K and G above, these performers break into song on the chorus. However, in this instance the melodic element appears independent of the loop material. Hence it appears that the pupils' melodic lines are an original addition. The performance duet is tight with both voices 'in sync' and 'in tune'. This performance element suggests that the interactive features of the programme do not only involve listening. This track demonstrated rhythmic sense and melodic awareness.

The piece by E and E, drawn from the top band class, appears to lack the symmetry demonstrated in the J and L track. While it follows the pattern suggested by the teacher there is some deviation, either by error or design, from the verse, chorus pattern. This can be seen in the lyrics, which read as follows:

Verse:

Sitting on the bus, there is a lot of fuss

Sitting on the train, not a lot to gain

I'd rather be on an aeroplane, going to Spain

But I'd only have to come back again

Sitting on tram, ain't it 'fam'

Sitting in my car, heading for the bar

Riding on my bike which I really really like

Walking in the street while I'm rapping to my beat.

Chorus:

We're going on a journey, we're gonna go far

We're going on a journey but not in a car

We're going on a journey, we're gonna go far

We're going on a journey but not in a car

Verse:

Sitting on the bus, there is a lot of fuss

Sitting on the train, not a lot to gain

I'd rather be on an aeroplane going to Spain

But I'd only have to come back again

Sitting on tram, ain't it 'fam'

Sitting in my car, heading for the bar

Riding on my bike which I really really like

Walking in the street while I'm rapping to my beat

Walking in the street while I'm rapping to my beat.

Walking in the street while I'm rapping to my beat

Here we have verse, chorus, verse, presented in quite a pared down rhythmic version. For example the pupils only use percussion elements in the chorus and make use of sparse melodic elements in the verse. Only one bass loop is used. Interestingly this makes it sound more 'rap-like' whereas the previous track had 'song' elements. Consequently the pupils don't sing to the track but rap throughout, mainly in unison.

If we look at the overall pattern we will see some other contrasting features:

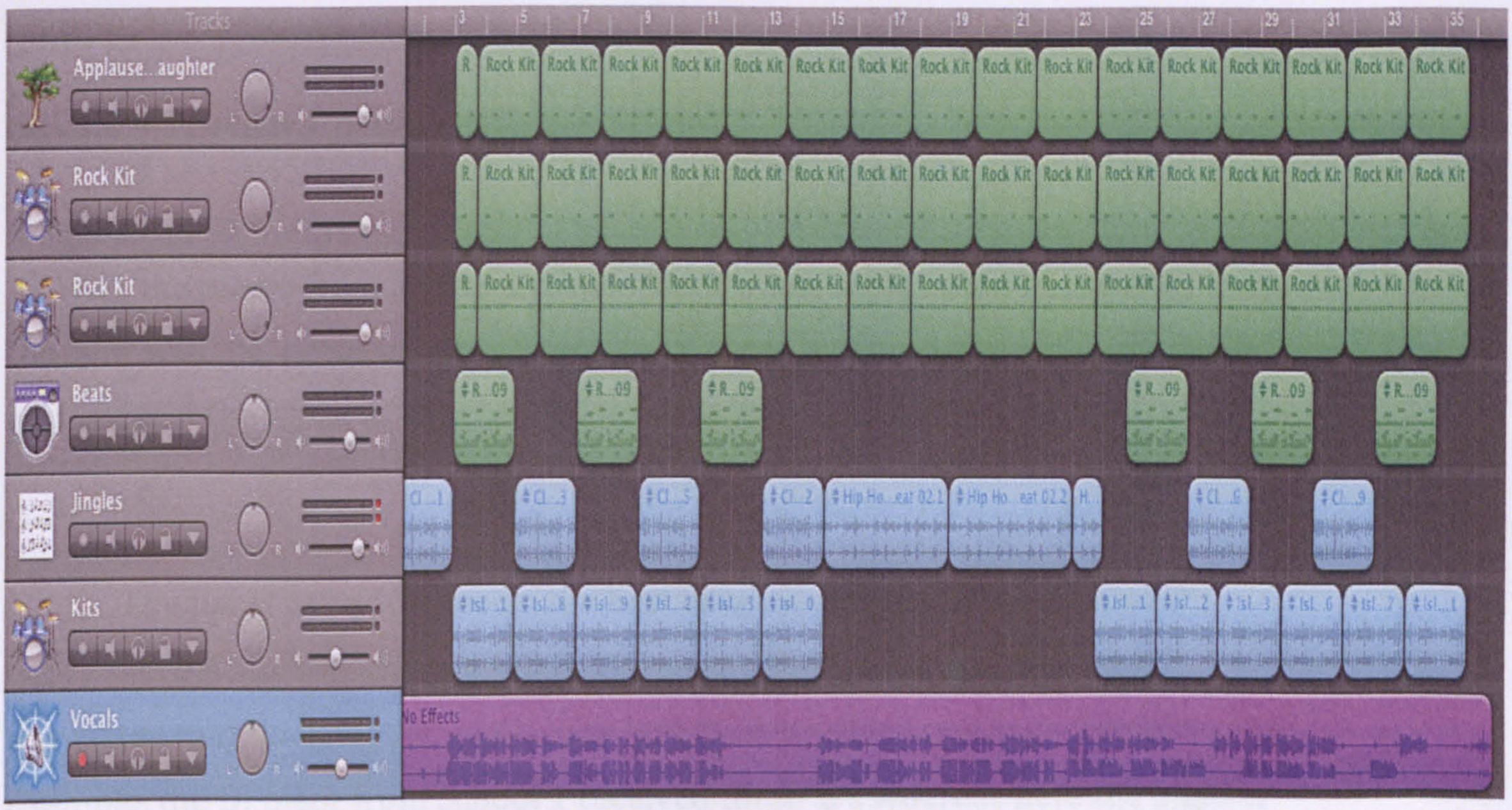

Fig 57: CD Track 14 – E and E complete, 1:12 min.

There are a lot less layers of music than in the J and L track and a range of uneven lengths in terms of loop formation and vocal line. Although there appears to be symmetry here the pattern is laid out as follows: Intro -2 bars; Verse 1 – 13 bars; Chorus – 10 bars; Verse 2 -12 bars. The pupils programmed drum loop starts on the fourth beat of bar 3. This results in the pupils struggling with the timing of their piece. They appear to finish verse 1 too soon and find it difficult to handle the transition from the chorus to verse 2.

However, there is also a lively and 'live' feel to the music and the pupils improvise at the end of the piece by effectively repeating the last line. There are also nice moments when the duo split into solo performance and then come back together again. In some respects this is a 'looser' interpretation of the brief. Whether it is 'wrong' because it misses out elements of the brief, or whether it

more 'creative' because it innovates, is just one of the issues that teachers have to decide when they value pupils' work.

5.5.2.2 – Teachers' panel response: School 2

As with the pieces from School 1 the teachers' panel were asked to say what they thought was the 'better musical outcome' of these two pieces, give them a grade and suggest the 'criteria' that had led them to their decision (see Appendix 1e).

The panel did not agree on the best musical outcome. Three members chose piece A and one chose piece B. Moreover, their grading of the pieces suggested that the panel thought more highly of the outcomes from School 1. For example, the DJ piece from School 1 received three '5's whereas here the highest grade here was '4'. However, the range of grades was narrower with only two grades (3 and 4) being used. So the teachers' panel thought this work was 'fair' or 'good' but not 'very good'. This seems somewhat unfair given the quality of the outcomes and the additional performance and creative elements. Perhaps the 'Rondo' from School 1 sat more easily within the teachers' evaluative frame than the 'Rap' from School 2. Certainly there are many issues surrounding the evaluation of pop and rock music which may challenge the teacher unschooled in such genres.

The criteria chosen by the teachers suggest something of this. As before they were wide ranging, with only four areas being shared.

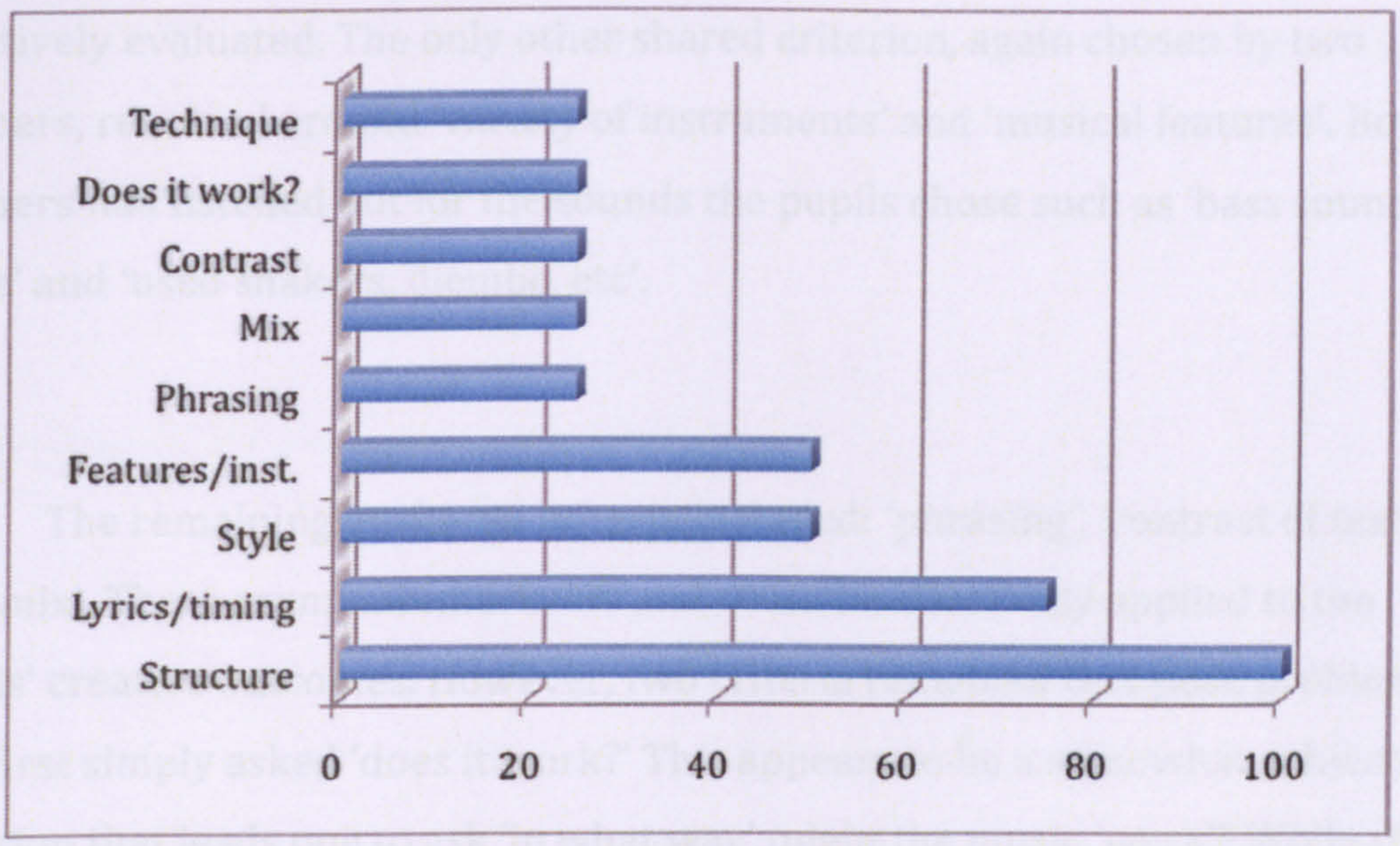

Fig 58: Teachers' panel criteria – School 2

However, this time all the teachers chose some aspect of structure as a criterion. For example, one teacher expressed this as 'are there two sections?' Quite clearly the symmetry of the pieces, noted above, impressed itself on the panel. All the teachers felt the two pieces were structurally sound. However, the piece by J and L was felt to be more 'well defined' and 'easy to follow'. The next main criterion, chosen by the three members of the panel, picked up on the 'lyrics' and their delivery. This was a welcome acknowledgment of the vocal elements in the pupils work. However, there appeared to be a slight confusion here about creative elements and performance elements. For example, one teacher stated that, 'piece A is more lyrical' while another suggested that, 'B struggles for timing'. How performance skill impacts on creative expression has been discussed in Chapter 3 and emerges here again as a problematic area. However, if that seems problematic the next criterion of 'style' – chosen by two members of the panel – takes us into uncharted waters. One teacher referred to the style as 'reggae, obvious style'. While there may have been 'reggae' inflections in the pieces (although this is debatable) this was clearly not reggae music. The other teacher categorised the style as 'does it sound urban?' This is clearly an attempt to acknowledge the contextual nature of the music and apply it a criterion. However, one of the resulting judgements was that it didn't sound urban because 'it was too polite'. This leads us to query once again how popular forms might be

effectively evaluated. The only other shared criterion, again chosen by two teachers, revolved around 'variety of instruments' and 'musical features'. Both teachers had listened out for the sounds the pupils chose such as 'bass sound in verse' and 'used shakers, djembe, etc'.

The remaining unshared criteria included: 'phrasing', 'contrast of texture' and 'mix'. These seem unremarkable and could be effectively applied to the pupils' creative outcomes. However, two criteria remained that pose problems. The first simply asked 'does it work?' This appears to be a somewhat subjective criterion that leads one to ask 'in what way' might the music 'work'? While the teacher's conclusion was a generally positive one – piece A: 'mostly', piece B: 'yes' – this is still a broad and difficult measure. However, it is not as difficult as the final criterion of 'instrumental techniques' suggested by one teacher. It reminds us that we need to find criteria that are appropriate to the work in hand. Without this we are judging the pupils according to what they do not, or cannot, do. This was the case here. The teacher's evaluation concluded: 'lack of, in both pieces'. This does not come as a surprise. The pupils were asked to do a lot of musical things in the course of the work, but they had not been asked to play instruments.

Overall the teachers' panel was generally positive in relation to School 2's musical outcomes. However, they did not value it as highly as the work produced by School 1, even though the range of musical activity was greater. The use of a popular musical genre may have posed problems for the teachers' evaluation. Performance and creative elements were merged in the evaluative process. While certain criteria were appropriate some struggled with the nature of the musical context. At times the criteria were subjective or inappropriate. My own analysis suggests that this was a well-taught and successful project which allowed the pupils choice within a structured framework. The context of musical materials chimed not only with the new technology but also allowed the pupils to inhabit a known musical territory. The pupils' musical interaction with the ready

made materials suggests an expansion and extension of the ways of working with the new technology that go beyond the choice and manipulation of sounds that characterised the work in School 1.

5.5.3 – Pupils' musical outcomes: School 3

Recap of brief: To choose ready-made loops that will go with 'The Grey Video' film clip. To synchronise certain sounds to the action in the clip. To make musical changes in the light of the action. To use humour.

There were twelve musical outcomes representing the work of approximately twenty pupils. Most of the work was done in pairs but three pupils worked on their own. All the pupils produced work that accorded with the guidelines set by the teacher. However, the work varied in terms of detail. For example, in two instances parts of the accompanying video were not set to sounds. This might have been the result of pupils working at different rates or to losing work and starting again. However, most pupils had little problem with the programme and the inclusion of the video was relatively trouble free. The school was experiencing some 'difficult' behaviour from the pupils during the time of the research. However, in the GarageBand lessons pupils were generally well behaved and focused. The teacher, who was in his NQT year, was aware of many developments in the field of the new technology. However, this was the first time the music department had used GarageBand in a classroom context. Unique to this project was the fact that the teacher supplied additional materials to the ready-made materials offered by GarageBand. These were: 'The Grey Video' movie clip and the 'Oh Yeah' sound loop.

There were a number of common features in the work produced by pupils. They all made use of 'sound effects'. Most commonly the pupils used

'crowd' or 'applause' loops to accompany the scenes of cheering fans. In some instances careful fading in and out of the volume enhanced this. Here the audience gets louder, fades in anticipation as the Beatles appear and then gets louder as the music begins:

Image redacted due to third party rights or other legal issues

Other sound effects were used to add humorous element such as 'chipmunks, 'car horns' and the like. Pupils sometimes layered these to produce interesting effects. In this extract a 'telephone busy' signal is mixed with different audience sounds and children's 'ahs':

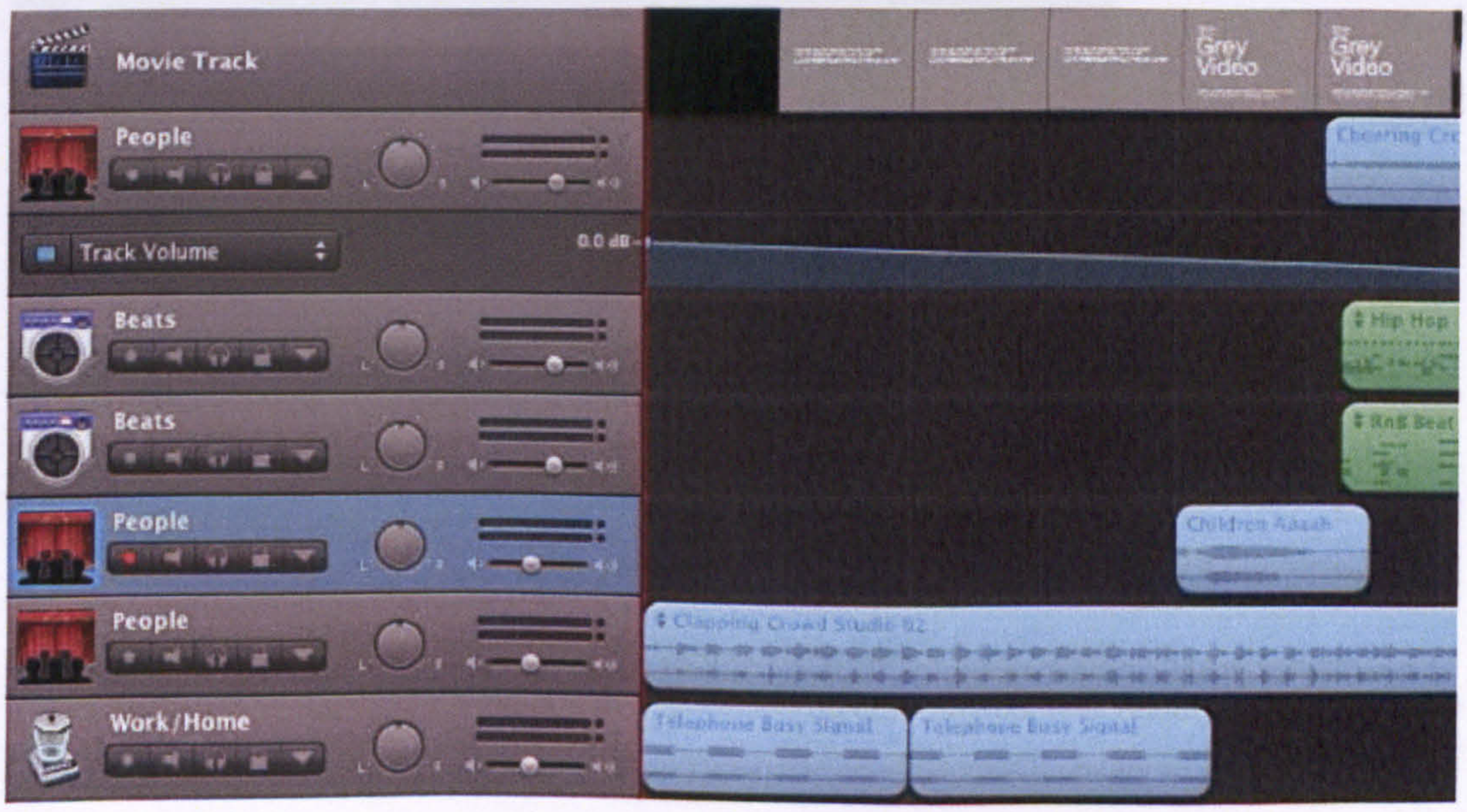

Fig. 60: Movie track 1 - Sound effects as movie begins from T&C, 0:22 min.

Another common feature was the use of the 'Oh Yeah' sound clip to synchronise with the onscreen John Lennon vocal. In some work this was a bit slavish and appeared every time the image appeared. In other work (as in E and J below) pupils used it with some discrimination. A final common element was the introduction of drum loops when Ringo started playing the drums. There were some good examples of synchronisation here although a few pupils had difficulty placing the loops exactly. In some instances there were good creative choices in relation to the nature of the drum sounds. Here we have a three-part groove quite at odds with the Beatles style, but nevertheless effective:

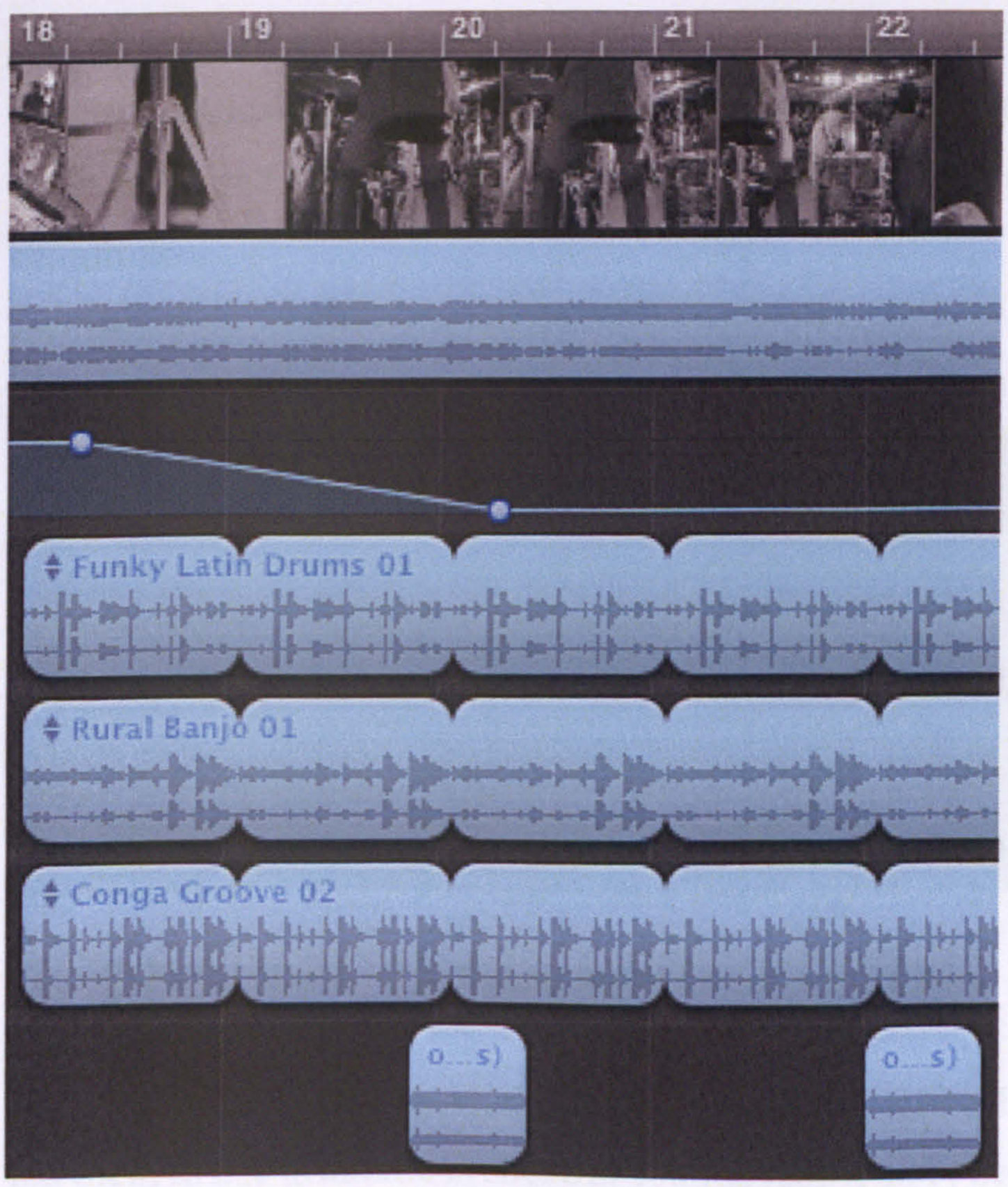

Fig. 61: Movie track 2 – Ringo's drums from S&D, 0:21 min.

Some issues arise from the manipulation of these types of musical materials. The sound effects are not musical in themselves. They play a certain

role in creating an ambience linked to the video. However, their relation to music and musical learning needs to be considered. In the real world of film and television the role of musician and sound effects technician are separated out. When real sounds are used as the basis for creative musical expression – as in musique concrete – they are processed and altered. Similarly the skill of synchronising sounds to film, while often serving to articulate its visual narrative, may not always be seen as creative, especially when the sound – as in the case of the 'Oh Yeah' clip - is linked to a specific visual event.

More creativity was afforded by the conflicting elements in the film. Hence, the intrusion of Jay-Z and 'rap' into the Beatles' performance allowed pupils to choose contrasting musical sound worlds. Here, the electronic (and sinister) sound of the synthesiser heralds the appearance of Jay-Z on the studio monitors.

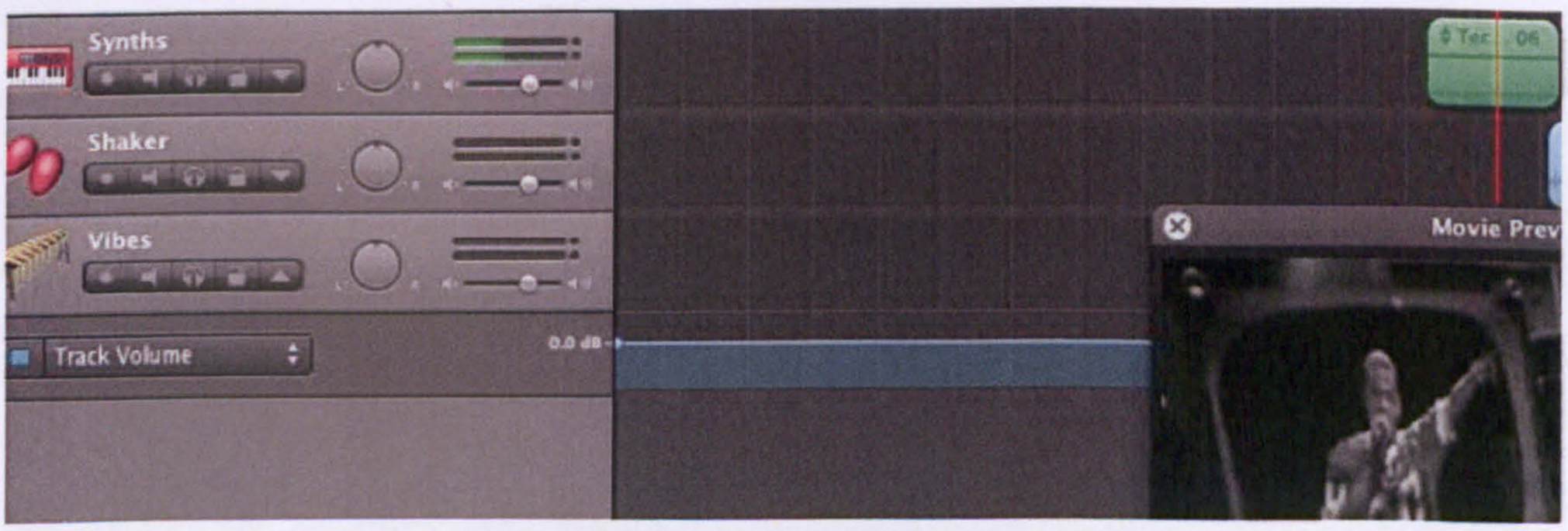

Fig. 62: Movie track 3 – Synth sound from C&D, 0:34 min.

In other pupils' work the tension offered by this collision of musical styles led them to use dramatic orchestral sounds (see E and J below). Pupils also attempted to use contrasting musical styles. They associated The Beatles with more acoustic melodic sounds and the rap and scratching elements with percussive oriented hip hop and dance styles. However, this was not always as clear as it might have been. This was possibly due to a lack of 60's sounds in the loop browser. However, I also sensed the pupils were not clear about the

contrasting sound worlds of the two musical eras. Nor should they be expected to. Such knowledge requires a degree of contextual detail that is beyond the range of most pupils. Nevertheless, the choices made in terms of musical contrast often led to interesting and effective results. This was particularly evident when the styles were layered. Here the pupils were, in effect, putting into practice the genesis of the project – that of the 'mash up'. Nor did pupils always try to literally emulate the different musical styles. As we shall see below, E and J chose to use musical materials that were 'distant' to the worlds of 60s Rock and 80s Rap in their articulation of the video narrative.

5.5.3.1 – Detailed analysis: School 3

This piece by E&J demonstrated most aspects of teachers' expectations but handled them in a slightly unusual way. The overview of the piece contrasts with the previous pieces from school 1 and 2 in that it does not demonstrate any symmetrical shape:

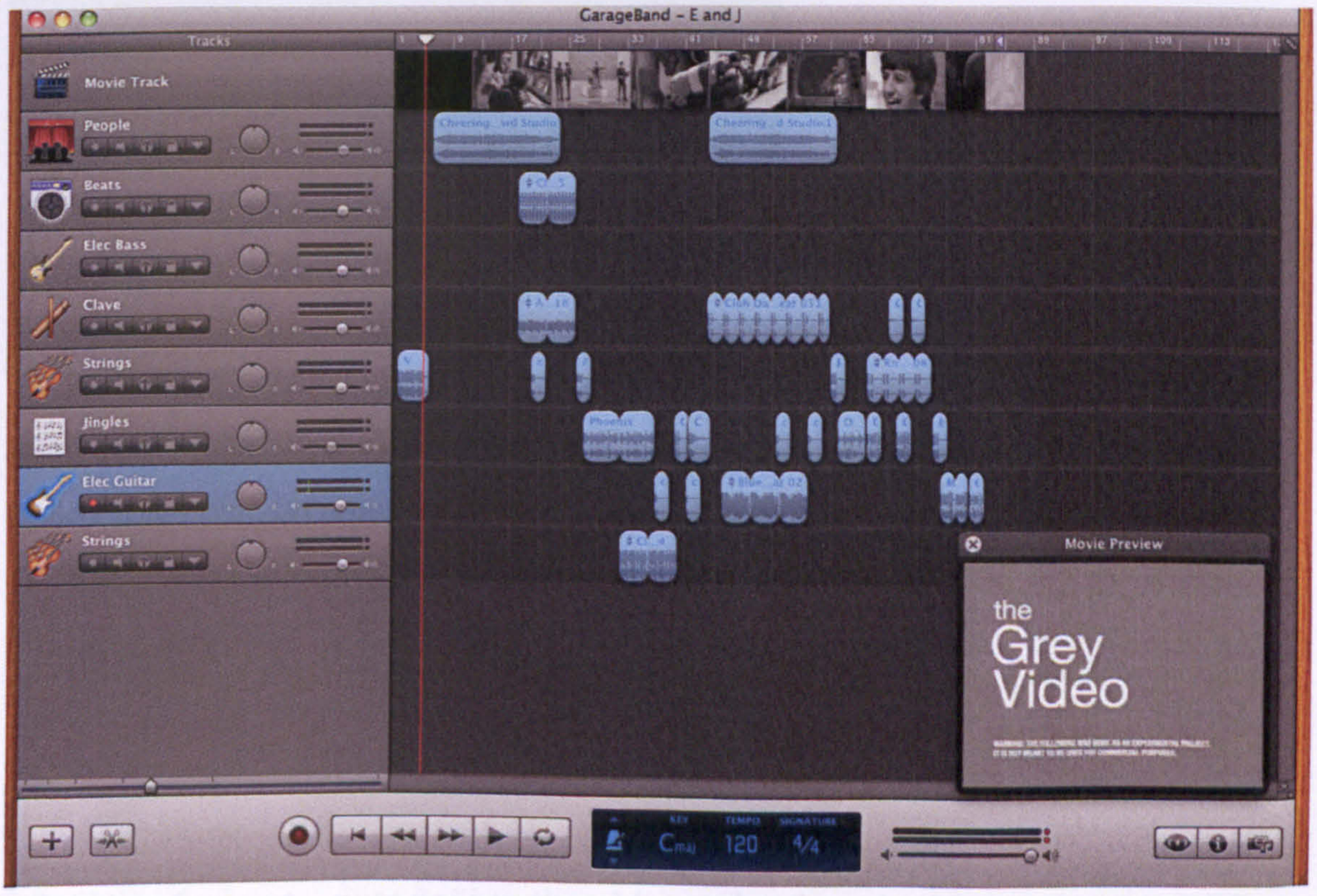

Fig. 63: Movie track 4 E and J complete, 2:46 min.

Here there are no structural elements drawn from rondo or verse/chorus forms. The music is 'through-composed' in relation to the video. It opens with what appears to be a knowing wink at the 'dated' nature of The Beatles context by choosing a 'vintage news' sound clip (Bar 1.3 – Bar 6) to play over the credits. The 'cheering crowd' predictably follows. When The Beatles appear an 'acoustic picking' guitar and quiet 'club dance' are used to represent the group – along with one 'Oh Yeah' – possibly hinting once again at the 'oldness' of their music. Its apparent calm is interrupted by an 'alarm' sound and a turbulent orchestral sound labelled 'phoenix'. This heralds the appearance of the rapper Jay-Z in the recording booth monitors. The pupils make good use of a volume curve to intensify the distress of the recording engineer and his team.

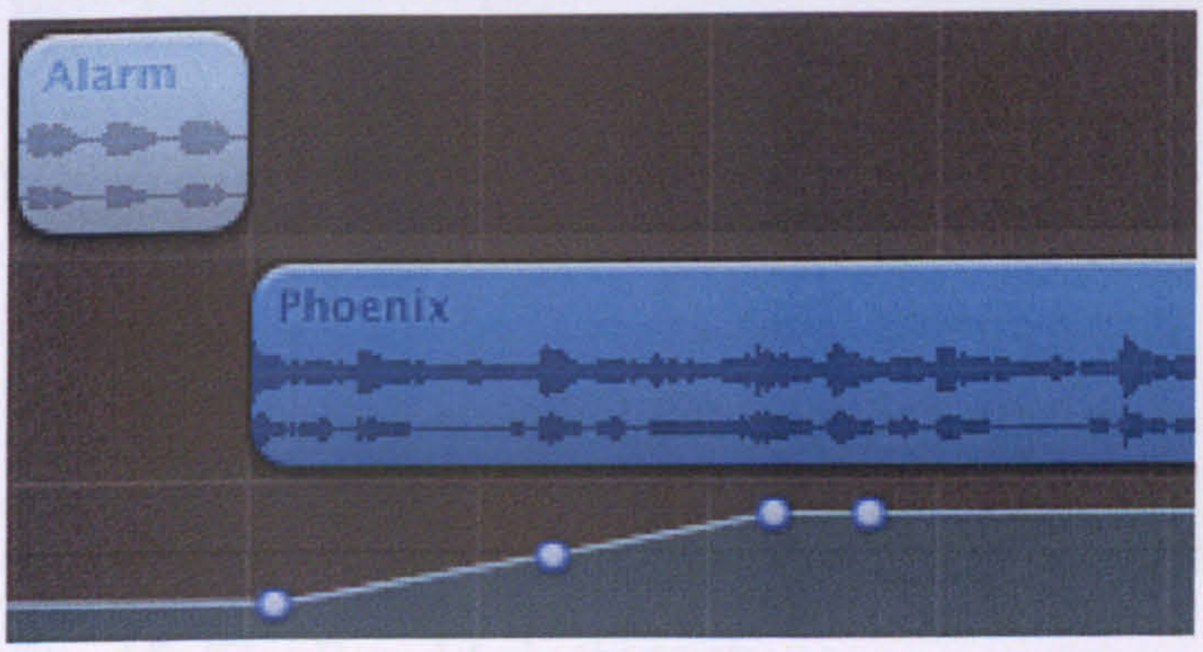

Fig: 64: The appearance of Jay-Z (bar 26)

This is what appears to be an effective contrast and one that interprets the film in an appropriate way. But rather than using a rap beat to delineate Jay-Z the pupils have chosen something quite distant in musical terms. They then move toward a more modern dance oriented sound by adding a livelier pair of 'club dance beats'.

A transition occurs with more 'humour'. Here 'comedy horns' – suggesting a 'kill' in a foxhunt – puts paid to the older style of music. A heavy beat and 'blues

guitar' suggest a change is coming over The Beatles. The pupils fade in and out the 'crowd' sounds here to suggest that they approve. A change occurs at bar 62 when John Lennon – or his 'body double' – removes his jacket and starts 'break dancing'. However, again in an unexpected move the pupils choose to use another orchestral string loop. The unusual choice is the first of many. From here to the end of the piece they 'mash' together a string quartet loop, a Chinese string instrument, various dance beats, another sound effect and a middle eastern Oud. Note how the pupils have 'shared' the same track for different loops. For example, the 'Orchard' string quartet loop appears on the same track as a drum track and returns on the track used by the 'oud'.

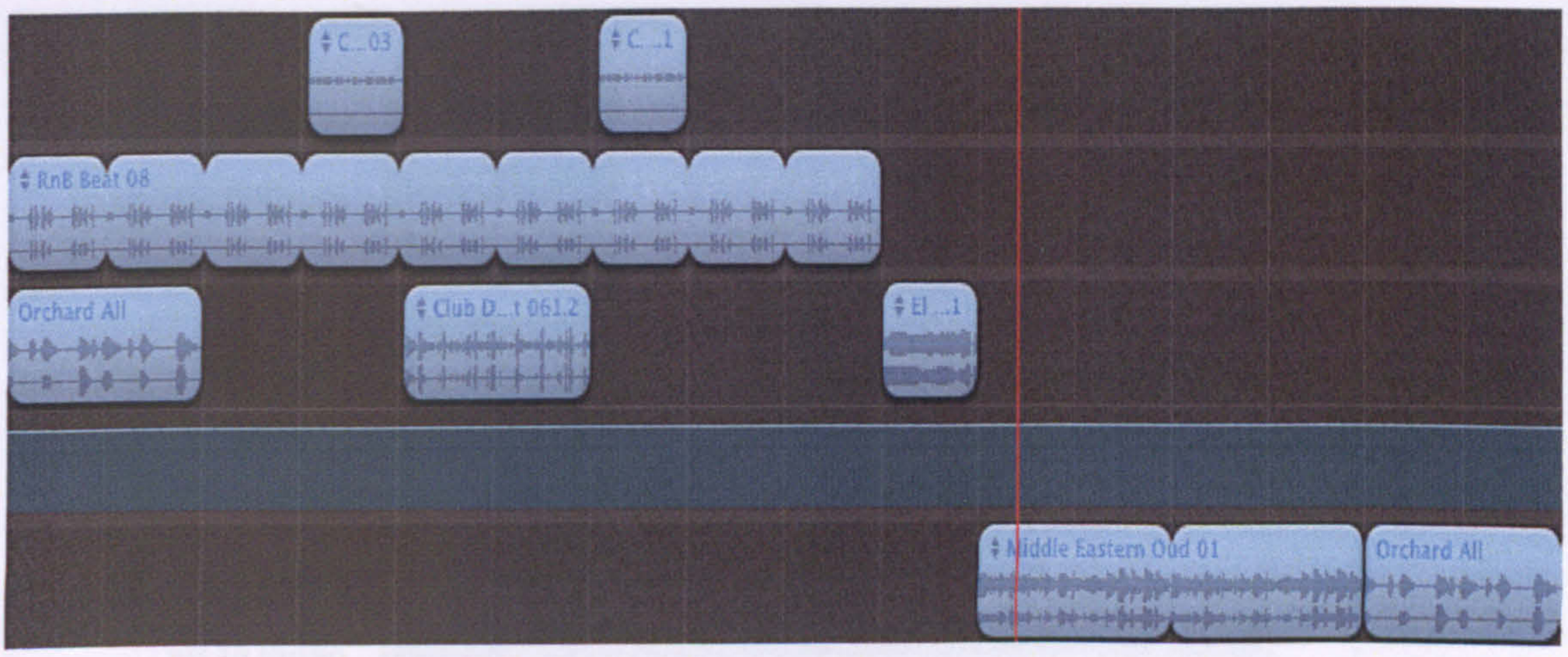

Fig. 65: The E and J closing mix

This range of sounds might suggest a random response. However, it all works well with the rhythmic flow of the movie and provides a range of musical contrasts that demonstrate a close reading of the film.

5.5.3.2 – Teachers' panel response: School 3

Owing to time constraints, the panel listened to only one piece from School 3. As before they gave the piece a grade and suggested the 'criteria' that had led them

to their decision (see Appendix 1e). The levels provided by the teachers suggested that the work was 'good' (three responses) or 'fair' (one response). Hence they thought this work as 'good' as School 2 but not as good as the best work in School 1. As already suggested, the evaluation of music to contemporary musical expressions may be more taxing for teachers than one based solidly in the European tradition.

The criteria chosen by the panel were less in number than previously. The teachers also shared more criteria for this project. They were as follows:

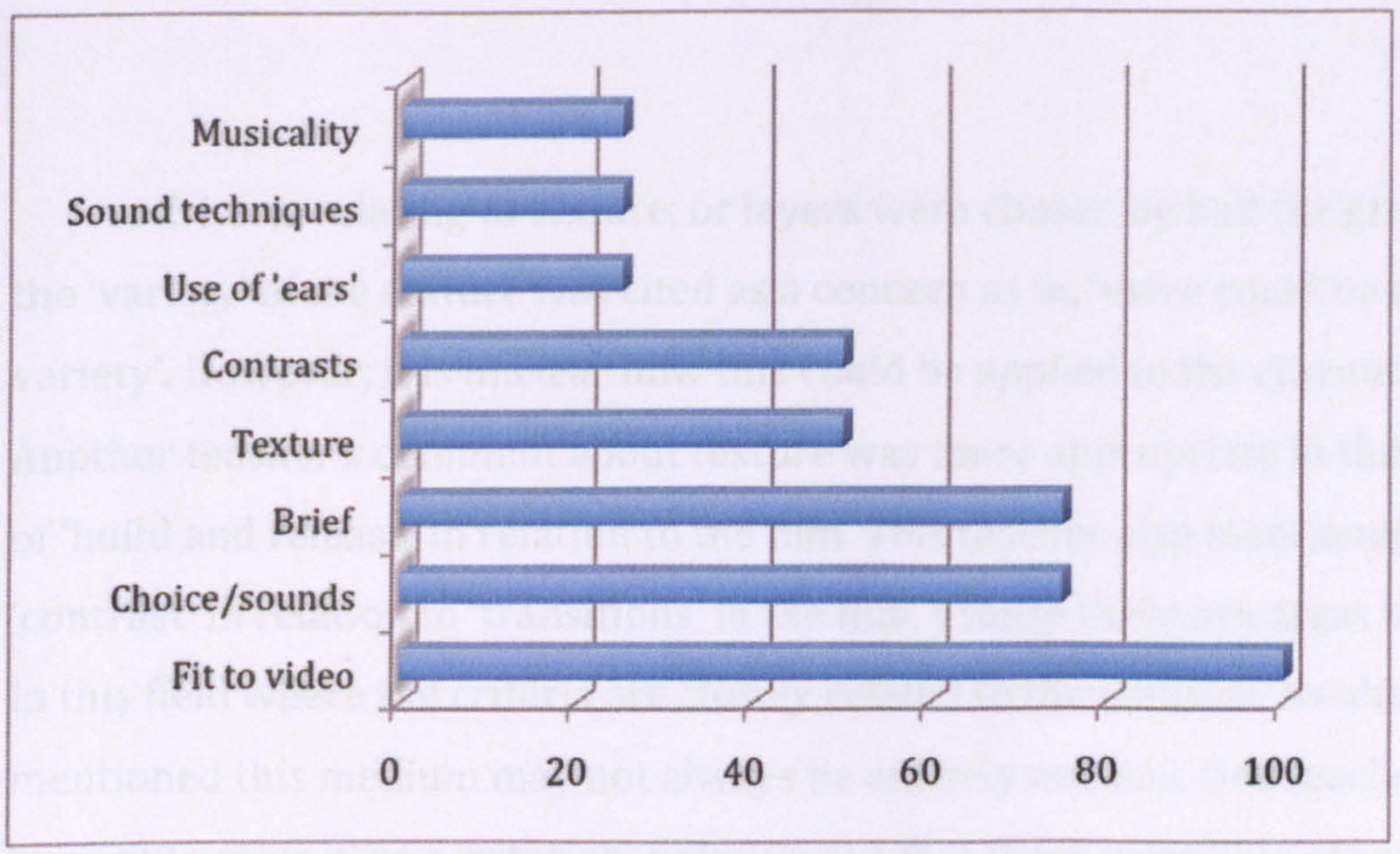

Fig. 66: Teachers' panel criteria – School 3

The criteria chosen by all members of the panel concerned the 'fit' of the music to the film clip. This was expressed as: 'do the loops fit the action', 'how the music fits' and 'matching audio to video'. This area focused on the synchronisation of areas such as the 'snare drum being hit'. As suggested above, how creative this is in musical terms is difficult to gauge. However, in this sort of project other types of creativity that encompass the merging of technologies may be evident. Somewhat linked to the above was the next main criterion, chosen by three teachers, of appropriate 'choice' of sounds. 'Appropriate' was deemed to be in

relation to 'what was happening' in the video. As discussed above the pupils made some 'inappropriate', possibly tongue in cheek, choices in relation to the video - for example, the use of orchestral string sounds in the break dancing section. So the notion of appropriate' is a problematic one. Another criterion mentioned by three teachers was the use of 'humour'. One teacher concurred that the music 'could be humorous' and another suggested that this happened on a 'few occasions'. How the humour was achieved was unclear. There were 'funny' sound effects but humour also arose from the juxtaposition of unusual musical choices and the film (for example, the Oud and string quartet at the end of the clip). How 'humorous' something might be could depend on a range of subjective factors. On the other hand, as one teacher pointed out, the pupils were fulfilling the 'brief' set by the teacher.

Criteria relating to texture, or layers were chosen by half the group. Here the 'variety' of the texture was cited as a concern as in, 'there could be even more variety'. However, it is unclear how this could be applied in the current context. Another teacher's comment about texture was more appropriate in that it talked of 'build and release' in relation to the film. This teacher also mentioned 'contrast' in relation to 'transitions' in the film. I sense these are areas to develop in this field where the criteria are closely related to the medium. As already mentioned this medium may not always be entirely musical. One teacher cited 'how musical is it' as a criterion, pointing out that there were 'lots of sound effects' but a 'lack of melody and harmony'. This may be true. In this field teachers may need to consider the nature of the creative expression and how it relates to musical understanding. One teacher felt that the pupils had not used 'sound techniques' effectively. By this they meant the 'fading in and out of sounds' and suggested that the ending was 'very abrupt'. The latter appears to be an aesthetic judgement of sorts. Perhaps the pupils wanted it to be abrupt. Moreover, the use of 'controlling' elements in the technology such as volume control is a technical skill and well as a creative choice. While some pupils may have stumbled across technical skills during the project they were not an integral part of the teaching and learning. One panel member mentioned criteria that

related to 'how well the pupils used their ears and their previous learning'. This was impossible to ascertain, and, like some of the criteria cited in relation to School 2, required yet more defining criteria or a very subjective response.

The teachers' panel thought the work was generally good and agreed on a number of effective criteria that were closely related to the task. When the criteria moved away from the context of the learning, judgements were more problematic. One teacher felt there were issues in relation to 'how musical' the outcomes were. As I have suggested above this could be linked to how 'musically creative' such a project may be. Of course, some sort of creativity was going on that involved music. In this respect 'The Grey Album' project, like the 'rap' work in School 2, addressed the musical world of the pupils, in which audio and visual content merge. This project was a worthwhile exploration of this world and appears to be a valid creative expression that utilises the new technology.

5.6 – Conclusion

This chapter has considered the new technology in relation to value and assessment. It has argued that the proliferation of national testing and arid level setting has worked against the fostering of creativity in the curriculum. It has reiterated that the currently construed values enshrined in the National Curriculum and in exam syllabuses do not always recognise the creative processes and outcomes offered by the new technology. It has suggested that alternative ways of gauging creative response are required if we are to validate the actions that take place when pupils are creative in the classroom.

One way the research sought to validate response was to ask the pupils what they thought and felt about their musical actions and creative outcomes. The responses here were positive and suggest that this measure should be

utilised more when monitoring response in the curriculum. For the teachers, part of the value of the new technology was its effectiveness as a learning resource in the classroom. They confirmed the technology had value in this area and also had the potential to be further developed in other musical contexts. However, it is still unclear how teachers might evaluate the pupils' musical outcomes of such work. There is a tension here between meeting the learning brief and being creative. The teachers appeared to struggle to find appropriate criteria which served the musical contexts and the pupils' expression. It is perhaps not surprising that many of the criteria reflected a consciousness shaped by the European classical tradition.

The value of the new technology was probed by a close analysis of the pupils' creative work. It is apparent that the technology was considered to have much to offer in this area. This was verified by the teachers' panel who found the outcomes to be mostly good to very good. My own analysis suggests that the pupils succeeded in the creative tasks they were set and that their work was expressed across a range of musical and creative levels. Nevertheless, there are issues that need to be addressed in relation to multimedia contexts where music only contributes to the overall creative outcome. There is the need to develop appropriate measures that reflect the ingenuity of the user in such technologically mediated contexts. There is also the need to guard against using inappropriate criteria drawn from other musical worlds. The wrong criteria set is likely not only to undermine the pupils' efforts, but may also devalue the technology and the musical landscape it inhabits. This would be a great pity, for it seems apparent from the sound of the outcomes – and from the pupils' and teachers' views of those outcomes – that the music produced during this research was valid and authentic. In terms of value, that should be enough to justify its place in any future music curriculum.

Chapter 6: Conclusion

6.1 – Introduction

This concluding chapter draws together my findings and touches upon a number of issues that emerge out of the research. In the first instance I provide a summary of the key findings on each of the research themes. I then revisit some of the areas arising through the lens of the role of the teacher. This begins by providing an overview of the changing perceptions relating to teachers in general and to music teachers in particular. I then analyse the roles assumed by the teachers who participated in the research in relation to the new technology and creativity in the classroom setting.

The chapter continues with an outline of the implications of the research in relation to the Key Stage 3 music curriculum. Here the conceit is that of the 'mix'. As the title of the thesis suggests, the music curriculum might possibly be 'remixed' to take account of the new technology and its affordances. Unfortunately, powerful forces continue to guard and perpetuate the bastions of traditional music education in our schools. As Jorgensen reminds us:

> Despite... efforts to democratize music and include popular and vernacular musics in the musical canon ... traditional ideas of the dominance of classical music, the narrowness of musical curricula and the validity of Western notions of music itself ... [are] difficult to dislodge. (Jorgensen, 2003: 4)

In some respects this research has challenged that 'notion of music itself'. It has suggested that non-performing musicians can be perceived to act in a musically

creative way which is valid and which promotes learning. Hence, in addition to effectively adding the new technology to the mix we need to remix and redesign our musical curriculum. This has implications for how we 'mix in' creativity and how we might value the processes and outcomes of such work.

I end the chapter by suggesting what I see as the limitations of this research followed by suggestions for future research in the area.

6.2 – Summary of key findings

This section pulls together the key findings from the four main research themes that have informed the thesis. These are: the new technology, musicality, creativity and value. In doing so it seeks to explain the relationship between the themes while comparing and contrasting the various forms of data gathered and the research sites used. Pedagogical issues arising are touched upon and are further developed in the following sections relating to the changing role of the music teacher and the new technology.

The advent of the new technology in the Key Stage 3 classroom, in the form of GarageBand software, provided an opportunity to interrogate current perceptions relating to musicality, creativity and value in the current music curriculum. In the light of previous issues surrounding educational application of music technology, it was important at the outset to ascertain if the software actually 'worked' in music lessons. This was investigated in Chapter 2 by looking across three contrasting classroom environments. While the contrasts were quite marked in terms of school attainment, academic intake and relative depravation, the response to the software was remarkably consistent.

Classroom observation played a part in these investigations. However, it was important to verify the observations with closely analysed interview data obtained from teacher and pupil participants across three academic years. An analysis of these sources demonstrated that the software was easy to use and engaged the pupils in a positive, visually driven, musical experience. In addition the participants positively responded to the quality and range of sounds offered by the software. They also welcomed the provisional nature of their musical interaction. By contrast the data also revealed a number of negative responses to the software. These included peripheral hardware not working, interface issues and file management. Another issue to emerge was the possibility of pupils being offered too much musical choice by the technology. This data suggested that the pedagogy emerging in relation to the technology needed to consider limiting and funnelling pupils' choices and the need to take into consideration the requirement to develop technical skills which would assist their musical decision making.

While these findings demonstrated that the new technology worked well in the classroom they did not show that they promoted musical learning. For example, the pupils' musical interaction with the technology lacked the traditional performance skills required by the National Curriculum. This highlighted the question of how the 'mixing' of ready-made musical materials might be seen to be developing musicality and musical understanding. Chapter 3 sought to interrogate this area. In addition to the three classroom sites already noted, the views of an independent teachers panel were sought to supplement and triangulate the classroom teachers' responses. Analysis of the teachers' views on 'missing' learning in relation to the technology suggested that they were concerned by the lack of musical performance in the pupils' musical interaction. Interestingly, the majority of pupil respondents stated that they did not play a musical instrument or categorise themselves as musicians. Moreover, the pupils' comparisons of traditional performance-based lessons with technology-based lessons favoured the latter. A number of pupil respondents suggested that, in the traditional performance context, they experienced feelings

of vulnerability, often due to lack of instrumental skill. Similar sentiments were echoed in the research data gathered from the beginning teachers' sample in their response to the negative aspects of creative work described in Chapter 4. Related to the lack of performance was the lack of reference to traditional music notation. Once again the teachers and pupils suggested a degree of variance. However, the data suggested that the visual interface of GarageBand did allow pupils to see music happening in a way that developed musical understanding. In effect, it allowed the pupils to become interactive listeners. This chimed with the technologically mediated world of the pupils, where appropriation and the re-use of sound material is now commonplace.

The research also probed the nature of the learning that occurred during the GarageBand lessons. In addition to the interview data obtained from classroom based teacher and pupil participants, evidence of learning was sought in the scrutiny of pupils' musical outcomes that was undertaken by the teachers' panel. The picture that emerged suggested that a range of musical learning was occurring: for example, an understanding of form and structure, instrumental timbre and character, and the awareness of synchronising sound to vision. Much of this learning had been intended: that is, it was designed and supported by the teachers. Other learning, for example the development of rhythmic understanding, occurred as a by-product of the pupils' interaction with the technology. The predominance of paired working practices used during the classroom sessions also emerged in a positive light. Scrutiny of the pupils' musical outcomes attested to the fact that the classroom teachers had effectively designed and modelled the learning. However, there remained areas of pedagogy – for example, the development of 'role' in pair work – that required further development. Moreover, because the technology did not meet the current requirements of the National Curriculum, issues relating to musicality, creative response and value remained.

Chapter 4 sought to explore creativity in relation to musical learning and technology in the Key Stage 3 classroom. To do this it initially interrogated the

views of a group of beginning teachers with regard to their general conceptions of creativity in the traditional music curriculum. The research focus then returned to the three classroom contexts to see how technology might mediate creative response.

The data emerging from the questionnaire and interviews with the beginning teachers affirmed that they endorsed the importance of creativity in the music curriculum. However, they felt ill-prepared by their own training to teach for creativity. They were also unsure about the nature of the learning that took place during creative learning. Evidence of a gender bias emerged here, with male respondents suggesting that creativity fostered musical understanding and skills and female respondents suggesting that creativity fostered life and social skills. The difficulties surrounding classroom creativity in traditional performing contexts were felt by the respondents to result in pupils feeling vulnerable due of a lack of skills and support. As previously stated this view was supported by data drawn from the classroom-based research. While the beginning teachers acknowledged that creativity played a part in their own teaching they also attested to the fact that the rigours of being a teacher left them with little time for the development of their own creativity. This section of the research raised broad issues relating to the confusions surrounding educational creativity, pedagogy and the training of teachers. However, it also reiterated issues relating to the pupils' ability, or lack of ability, to engage in meaningful creative response.

If lack of skills and the absence of starting points were barriers to pupils' musical creativity then perhaps the new technology might leapfrog that hurdle. Hence the research returned to the three classrooms to interrogate what creative affordances the technology might offer pupils. The findings here suggested that the creative framing of the classroom activities – designed by the teachers – promoted learning through affirmative active engagement. A number of respondents also felt that the technology taught them how to be creative. More

contentious were the issues surrounding ownership. How might ready-made musical materials be fashioned into new personal utterance? The majority of the participants responded positively here: the technology did offer enough opportunities to re-order, alter and mix their musical choices into something new. However, not all agreed. A small minority felt the lack of an original performance contribution undermined their work and might open it to accusations of plagiarism. These contrasting responses suggest that the participants held different conceptions of musicality. Such conceptions would have a resulting effect on the value placed on the musical outcomes resulting from the technology.

Chapter 5 considered the value that teachers and pupils placed on the processes and outcomes emerging from the new technology. It interrogated this by observing and interviewing the participants in the three schools and by analysing the musical outcomes with a panel of serving secondary music teachers. While this is a difficult area, it was felt that some attempt to probe a response in relation to value was important and timely.

Most pupils valued their music making with the technology in a positive light. Often this was to do with the resulting sound of their work. However, as suggested in Chapter 2, they also valued the process of working with the technology itself. The classroom teachers' evaluation focused on the success of the project. This confirmed the findings in Chapter 2 that the technology worked – as an educational resource – in the classroom. Less clear was the classroom teachers' ability to grade the pupils' outcomes. Criteria were generally not shared with the pupils nor embedded in the teachers' planning. Criteria relating to creative response were either absent or subjective.

The data resulting from the evaluations of the teachers' panel revealed that they valued the work in general terms. The teachers deemed the pupils'

outcomes as 'good' to 'very good'. However, the criteria relating to these judgements varied considerably. The teacher respondents found it easier to develop criteria in relation to traditional elements or the teaching brief. They had more difficulty devising criteria that measured genre handling, technical mastery and creative response. In some instances inappropriate criteria were used. A developing pedagogy would need to more clearly delineate in what way it might value the musical interactions with the new technology. While the research presented here suggests that the pupils' music making in the technological context was deemed valid and authentic, more measures are required to quantify its success. Criteria drawn from other conceptions of musicality and creativity might only serve to devalue and undermine the work. In devising a new set of values in relation to learning and creativity, teachers also need to consider their role in promoting such values.

6.3 – The changing role of the teacher

When I was doing my PGCE course in the 1970s I remember reading R.S. Peters *Ethics and Education* which discussed the concept of authority and education. Peters delineated two types of authority – the 'formal' and the 'actual' authority of the teacher. The teacher's formal authority placed them 'in authority' – for example, an authority figure 'in loco parentis'. The actual authority of the teacher saw them as 'an authority on something' – for example, in their subject area as an 'expert' with knowledge to impart (Peters, 1967: 252-265). This view was challenged on a number of fronts in the years that ensued. The nature of the knowledge imparted by teachers was questioned. One strand, driven by a concern for social justice, saw knowledge to be unfairly distributed and only available to a privileged few. Following the work of the new sociologists of education (Young, 1971) Finney and Philpott suggest that this:

> ... problematised the school curriculum and argued that 'high status' knowledge – that which is formally assessed, 'literate' and taught to the 'ablest' pupils – was created and perpetuated by and for certain social groups to maintain the social order. (Finney and Philpott, 2010: 8)

On another front, as we have seen in Chapter 4, political ideology sought to diminish the authority of teachers as 'autonomous professionals' and heralded in a series of prescriptive curriculums and rigorous testing regimes (Torrance, 2002). Teachers now had to be accountable to a set of stakeholders who demanded results through 'a culture of achievement' (Gewirtz, 2001). In this context issues relating to social justice were sidelined. The continuation of centralised government control in the development of the role of the teacher can be seen in the gradual introduction of competencies and 'standards' in initial teacher training (TDA, 2008). These have sought to control and define the roles and areas of knowledge that teachers should possess. The government also filters who can access teacher-training courses. As we saw in Chapter 4 this results in musical identities that are partly shaped by the formal approaches perpetuated in higher education (Hargreaves et al., 2003). The government also maintains its grip on the development of teachers through the Career Entry and Development Profile (TDA, 2010), initiatives such as the Key Stage National Strategy (DCSF, 2006), the General Teaching Council (GTC, 2010) and the scrutiny of Ofsted. Many of these initiatives seek to define the role of the teacher inside and outside of the classroom.

The academic world has also sought to redefine and shape the role of the teacher through the development of pedagogic theory. A number of philosophical and psychological writers (Dewey, 1916; Vygotsky, 1982; Freire, 1996) have sought to influence teachers' perception in relation to the justifications for, and actions in relation to, their approach to teaching and learning. Needless to say these are often in conflict with government initiatives that wed education to the market place. Bernstein's work on pedagogy reflects some of this tension. He

suggests two models of pedagogic practice: 'performance' and 'competence'. In performance pedagogy the practice is 'visible' where:

> the hierarchical relations between teacher and pupils, the rules of the organisation (sequence, pace) and the criteria [are] explicit and so known to the pupils (Bernstein, 1996: 109-110)

This is the approach very much favoured by the government's National Strategy where the author, or authority, of the learning is the teacher. In this context the learning is articulated through teacher-devised targets, starters, the plenary and assessment strategies. However, the 'competence' pedagogy makes use of invisible practice. Here:

> the hierarchical rules, the rules of organisation and criteria [are] implicit and so not known to the pupils ... In the case of invisible pedagogic practice it is as if the pupil is the author of the practice...(ibid.)

In music education we have seen how the traditionalist teacher (Swanwick, 1988) has been challenged by a series of curriculum initiatives that make use of 'invisible' practice and increasingly frame the teacher as 'facilitator' (Paynter and Aston, 1970; Schafer, 1976; Green, 2008). Much of this has been in response to the alienation and disenchantment that pupils have expressed in relation to curriculum music (Harland, Kinder and Hartley, 2000). As we saw in Chapter 1, these initiatives have centred round creative practical music making and the introduction of popular music forms (Ross, 1995). These approaches, while attempting to authenticate the music curriculum for the pupils, have further eroded the 'authority' of the music teacher. The formal approaches to musical learning – so deeply embedded in the teacher's own learning experience – have been somewhat discredited by these initiatives. So too has the knowledge base of

their authority, which does not always include the multifarious musical genres required by the curriculum. As Swanwick asks: 'How is a solitary music teacher in school to cope with the range?' (Swanwick, 1988) We have also noted that the increasing growth of technology has further deskilled teachers who have been denied professional training and development in this area (Cuban, 2001).

In the last few years the promotion of informal learning practices based on popular music has further impacted on the role of the music teacher. As we have seen this has been most clearly articulated by the 'Musical Futures' initiative, promoted by the Paul Hamlyn Trust (D'Amore, 2009) and emerging from Green's research (Green, 2001; Green, 2008). While informal learning has been, and continues to be, theorised as pedagogy in the research field its application in the classroom is varied. In some instances it is seen to inhabit the same territory as a six week scheme of work – as in 'doing Musical Futures' (Hallam et al., 2008). In others it becomes a convenient 'off the peg' – and 'hands off' – methodology which merges with other practical learning approaches (Finney and Philpott, 2010).

While the issues and handling of informal learning approaches is beyond the scope of this research it is worth noting that its dominance is leading to further changes in the teacher's role. Having been told by previous initiatives to rigorously teach to a set of targets it is now suggested that teachers 'stand back' and let the pupils do what they want. We have also seen that the music teacher's time to develop creatively, musically and professionally, as discussed in Chapter 3, is curtailed by a range of assessment and administrative duties and a lack of resources and training (Burnard, 2007). Successive governments have eroded their professionalism and autonomy. Their own formal training, often in the European classical tradition, and critiqued in this research, is seen as inappropriate to the musical lives of their pupils. Their musical authority continues to be challenged by the swinging pendulum of changing fashion in music education. Can music teachers teach anything?

6.3.1 – The new technology and the role of the teacher

The research suggests that teachers had a clear perception of 'teaching' when handling the new technology in the classroom setting. For example, the processes and expectations were demonstrated through modelling as in:

> The best thing to do is just to show them what you expect them to do. You don't really need to say anything other than: 'like this'. And suddenly they are all kind of, 'alright, she did that'. (C, female, teacher, School 2)

Other teachers agreed that modelling was effective, especially when using the interactive board. For example: 'they're listening and you...see it on the board. Visual aspect. Demonstrate it. Model it.' (M, male, teacher, panel) The classroom dynamic of modelling was also mentioned as in: 'it sets the Year 9s up quite well, doing that at the front of the class'. (Y, male, teacher, School 3)

The respondents were also aware of the areas that required support and instruction as in: 'teaching them the practical skills to use the software' (C, female, teacher, School 2). In some instances this turned the teacher into ' type of technology person, sorting things out' (ibid.). As we have seen elsewhere the technician side of things could be time consuming. As one teacher said: 'there's a lot of preparation goes in to using it successfully, and getting the most out of it, and that often isn't taken into account' (Y, male, teacher, School 3). Preparation was also evident in the materials that teachers provided in support of the musical tasks. Schools 2 and 3 in particular supported the learning with 'screen grabs', PowerPoint print outs, and 'aide memoires'. These helped pupils recall key facts in relation to the task. As one respondent said: 'I set up the five golden rules and that really worked' (ibid.).

A major area of 'teaching' for the respondents was the need to guide choice. With so many loops available in GarageBand this was a key consideration. As mentioned elsewhere one respondent felt this was about, 'trying to help them make the right choices... within a framework' (C, female, teacher, School 2). As we have seen the frameworks provided for the pupils were clear and comprehensible. Hence in School 2 ' they have the framework of the rap or the song structure' (ibid.). This respondent also wanted to 'help them make better choices' and 'guide them in a better direction' (ibid.). This notion of guided discovery was evident in all the projects and is in sharp contrast to the initial stages of the Musical Futures process where pupils are expected to make their own choices (D'Amore, 2009). The teachers were also conscious of the constraints of the curriculum timetable in relation to choice. As one teacher pointed out:

> I think that limiting choice is a good thing within a school 'hour and ten minute' lesson. You know because they don't have the opportunity to sit there and make choices that take hours and hours. So maybe that takes the stress out of it. This is a kind of limited choice here but there is enough choice within it... (C, female, teacher, School 2)

For another respondent the possibility of too much choice could result in 'a lull in the pupils' enthusiasm'. Hence he felt 'there was too much freedom to it' and he needed to 'rein in their possible options' (Y, male, teacher, School 3).

Of course, modelling, providing support, framing the learning and guiding discovery were not the only roles that the teachers engaged in. They were also facilitators when the pupils embarked on practical interactions with the music and the technology. As a member of the teachers' panel suggested, at moments like this:

> You might be seen as a bit more of a facilitator than a teacher, in some ways. 'Cause you're providing something with them to get on with rather than teaching them... (S, male, teacher, panel)

Of course there is nothing unusual about this. In many practical contexts music teachers stand back and allow the pupils to explore and make musical choices. This can be a fruitful area. As one respondent said:

> Quite often I am surprised by what they come up with. And it is things that I haven't thought of doing and it works really well. And I really quite enjoy doing that. (D, male, teacher, panel)

Teachers were required to intervene on those occasions when pupils required technical skills support. However, as we saw in Chapter 2, the training to support teachers in relation to technology is often missing (Cuban, 2001). This appeared to be the case with a member of the teachers' panel who did not feel a '100% confident' in his subject knowledge of the GarageBand software. Nevertheless, he felt he should not abdicate responsibility. By working alongside the pupils and being honest they could 'learn together'. So in cases where he did not know the answer to the pupils' enquiry he would admit: 'I'm not an expert, but I will find out' (M, male, teacher, panel). While this appears to be an optimistic stance it is easy to imagine other contexts where a lack of knowledge sees both teacher and pupils floundering.

Facilitation also requires a degree of monitoring of the pupils' active engagement. Some pupils have the wherewithal to work independently. Others may require support and guidance. The following quote suggests something of this:

> Pupils like D and P, who have done a good bit of work of their own accord, would ...be absolutely fine. They would have had the patience and the acumen to just get on with it. Whereas, someone like J, who at times needs a bit of one on one help, might need an extra 5 minutes ...[support] to start them. If I were to let him 'get on with it', he'd be on YouTube watching '50 Greatest Premiership Goals' or something. It just wouldn't work. (Y, male, teacher, School 3)

Teachers also felt they had a role in contextualising the learning. For example, in the rap lesson the teacher had planned to 'get them (the pupils) to research a little bit about the context' (C, female, teacher, School 2). Similarly there was the need to 'listen and evaluate' and share what worked well and why. The teachers were also conscious of 'progress' and 'extension'. Mostly this was in terms of the completion of the task in hand and was driven by the strategies adopted by the teachers in the classroom. However, one respondent took a longer view, saying:

> Even at this point of Key Stage 3, you're teaching some things that are quite easily transferable to a GCSE lesson about editing. Because there is always going to be one pupil that goes ahead of the group and then you have to think on your feet about extending the task for them. So you then go into more detail about splitting and joining loops and ... re-arranging. So my role as a teacher is that I have to be constantly on my toes with the advancement of technology and the way pupils are interacting with it. (Y, male teacher, School 3)

6.3.2 – Summary: the music teacher and the new technology

The music teachers in the research drew on a range of formal and informal approaches which balanced instruction with discovery. Their use of the new technology located the work in the technological mediated world of their pupils. For the most part they chose materials from musical landscapes that were relevant to the pupils' musical world. The projects involved the teachers in designing, articulating and supporting the learning. While they allowed the pupils 'informal time' to interact and engage with the technology the lessons were structured through modelling, facilitation, technical support and intervention. The evidence from this research suggests that the teacher is much more active and controlling than the facilitator role suggested by the Musical Futures model. It is also worth noting that the practicalities of the current curriculum – such as time constraints - played a part in the teachers' thinking, moving them toward the imperative that their pupils make 'good musical choices' in the allocated time.

Turning to the creative affordances of the technology the teachers were active in developing technical skills and controlling creative choices. This accords with Reid et al., who recommended in their report on the creative use of digital video in schools, that teachers need to be conversant with the language of the medium and be clear about their role in the creative process(Reid, Burn and Parker, 2002). While there were slight differences between the teachers' approaches they all exhibited an informed handling of the technology. Similarly they did not rely on the 'blank sheet' approach to creativity suggested by other music technology (Scrimshaw, 2001). They provided the pupils with frameworks, starting points, models, support materials, and criteria. In tapping into the banks of ready made sounds provided by GarageBand they sought to guide the pupils' choices while offering the opportunity of musical ownership. The success of their approach appears to be borne out by the generally positive pupils' view of the processes and its outcomes. The quality of the outcomes, as

suggested by the response of the teachers' panel, was mainly seen to be 'good' or 'very good'. The pupils for their part saw their music as authentic and 'real'.

6.4 – Implications of the research

There are many implications that arise out of this research – possibly too many to cover in detail here. Nevertheless I intend to focus on a clutch of implications drawn from the main areas covered in the thesis. Here I use the conceit of the 'mix' to formulate the following questions:

- How can teachers include the new technology in the mix of music classrooms?
- How might music educators remix or redefine the Key Stage 3 curriculum?
- What are teachers mixing 'in' when they make use of creativity in their music lessons?
- How might teachers and others value the mix that emerges from the new technology?

6.4.1 – Including technology in the mix

This research has discussed how the introduction of technology into schools has been problematic. The issues have included the exaggerated claims of its educational potential, the difficulty of maintaining and mastering the resources and the lack of support and training for teachers. On the other hand, the research has demonstrated that the new technology addresses some of these problematic issues. Speed, simple set-ups, user friendliness and the provision of ready-made

musical materials are just some of the attributes that make the new technology worth considering as an educational resource.

However, schools still need support in the introduction of the new technology. A case needs to be made for funding that purchases sufficient numbers of computers to serve Key Stage 3 classes. Other resourcing issues, such as the proper installation of equipment, technical support and linked visual displays, also need to be considered. Unfortunately, funding in schools can be piecemeal. This leads, as we saw in School 1, to sets of incompatible equipment that accrue over a number of financial years. A case needs to be made to buy sets of computers and to review the provision on a regular four-yearly cycle. National umbrella organisations such as the Music Manifesto group – who have done so much to promote instrumental tuition in school – could develop campaigns that lobbied for funding in this area of musical engagement.

Of course, even with the funding in place, schools need help in choosing the appropriate resources. In the past bodies such as Becta (2010) have supported the introduction of music technology into schools. However, currently they do not have a music officer and their focus seems to be guided by industry and skills[36]. It was also the case that, in the past, local authorities provided advisory support in the field. Unfortunately, due to cuts in funding, this is no longer available. So it is left to commercial outlets to provide advice on the purchase of technology. This is an unsatisfactory situation and needs some sort of solution. An independent advisory board which contains expert technologists – and who are also informed teachers - is needed to advise schools on the appropriate resources for the various levels of work that go on in the music curriculum. In particular they would need to provide support for the appropriate type of equipment required at Key Stage 3.

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36 Since writing the thesis the new Conservative/Liberal coalition government have announced the planned closure of Becta.

This body could also have a role in providing in-service training for teachers. This is a crucial area. Without professional development teachers may be unable, or disinclined, to handle and articulate the resources. This training also needs to be a feature of teacher education courses. However, it should be more than just training in the nuts and bolts of the technology. A shared pedagogy needs to emerge which articulates the technology in terms of musical learning. This research has begun to address the area by probing what might be learned, and what is appropriate learning, in relation to the new technology. But much more work is required. In tandem with such work should be the development of materials and resources that provide models for teachers to explore. Currently there is a dearth of such materials. Curriculum support and training needs to be developed along the lines of the current Musical Futures model which provides free resources and a national training programme.

6.4.2 – Remixing the music curriculum

This research has suggested that the National Curriculum, as currently formulated, has no way of acknowledging the musicality of the non-performing musician. This has to change if teachers and pupils are to make use of the new technology in the Key Stage 3 classroom. No doubt many music educationalists will find this difficult to accept, for it questions the very nature of what it is to be musical. However, they need to bear in mind the difficulties many pupils have when trying to access the current curriculum. If music is to continue as a core subject for all pupils, which enshrines the values of inclusion and equity, some attempts need to be made to accommodate all musical actions and actors.

While this is a battle for hearts and minds there are some practical steps that could facilitate change. The wording of the curriculum could change to suggest pathways that only make use of the new technology. This would dispense with the need to 'perform' through 'notations' in the more traditional

sense. There is already a model for this at 'A' level where pupils can take a 'music technology' strand which emphasises studio skills (EdExcel, 2008). Recent changes at GCSE have also acknowledged that it is possible to 'perform' through music technology (EdExcel, 2009). Other examination strands, such as BTEC Nationals (Edexcel, 2007), make use of the new technology in their approaches to musical learning. With such changes in place pupils could move onto higher levels of engagement and be rewarded for doing so. One possible outcome would be a dramatic increase in the number of pupils taking public exams in music.

Of course, simply changing the wording of the National Curriculum – while it would let teachers 'off the hook' – would not address those issues relating to resourcing, training and professional development that so bedevil the use of technology in our schools. Nor would it provide the detailed approaches and content of a new technology music curriculum. I believe the research has shown that musical learning does occur when pupils engage with the technology. However, the nature of the learning and its relation to other types of musical learning needs to be scrutinised. There is a real danger that opportunities offered by the new technology will be hijacked by assumptions drawn from other musical traditions. More needs to be done – through research and in the classroom – that brings into being a pedagogy that is suited to the new technology.

This brings us to the issue of curriculum design. Should there be one 'music curriculum' at Key Stage 3 or many? For those teachers who value the qualities of traditional musical performance and still believe in the study of the European classical tradition the idea of classrooms awash with the new technology may be disconcerting. However, a number of parallel music curriculums already exist in schools. There is an instrumental strand, an extra-curricular strand, and an examination strand. For the most part these serve small numbers of traditional performing musicians. In many instances these strands operate outside the classroom.

Within the Key Stage 3 classroom there may be a case for developing a number of curriculum strands that accommodate a range of musical actions. This might include a performance strand – possibly utilising aspects of informal learning; a strand that would serve singers in traditional and contemporary contexts; a strand that would use the new technology in the ways discussed in this research. Other strands might serve specific cultural and regional needs, such as steel pans or brass bands. While there would be implications relating to resourcing, class size, timetabling and the role of the music teacher, the expanded curriculum would offer greater access and equity.

What pupils do what strand would need careful consideration. If the strands were exclusive there might be a real possibility of pupils being 'ghettoised' in one strand or another. It would be problematic if the perceived 'non musical' pupils, who 'only' did music technology, were looked down upon – a sort of dustbin strand in the music curriculum. On the other hand, to pressurise non-performing musicians into performing contexts could result in the feelings of vulnerability and loss of motivation that have been reported in this research. It may well be that the three years comprising of the Key Stage 3 period are dealt with differently. In year seven pupils could be offered a carousel of all the strands. In years eight and nine pupils could 'major' in areas of strength while still being offered the opportunity to access and fuse with other musical strands. This type of activity is reflected in the real world where artists merge technology and traditional performance.

Of course we have to ask ourselves what skills and musical backgrounds will music teachers require to 'deliver' such multiple music curriculums. The role of the teacher has already been discussed above. Here I want to mention the source of our teachers. As the research has suggested, undergraduates embarking on teacher education are often challenged in terms of their musical understanding, skills and perceptions. This is partly due to the qualifications required of those who wish to embark upon a teaching career. Currently a first degree in music is required along with a clutch of GCSEs. This means that all our

music teachers are coloured by academe. While the courses on offer at universities and conservatoires continue to expand the range of musical options it is perhaps time to consider a broader source of expertise to enliven the musical life of our schools. This might include the DJ, the rock musician, the studio producer, and the rap artist. This is not to suggest an 'artists in schools' approach. Rather it is a way of broadening the teaching profession. By developing a sound pedagogical grounding for these musicians we might enable them to work as teaching professionals in our schools.

If music education of a generalist nature is to survive and flourish at Key Stage 3 then it will need to develop a value system which recognises pupils' musicality in a variety of contexts and genres. We will need music teachers with the expertise and authority who can promote, foster, and develop this range of musical actions. The new music technology should play an important role in this remixing of the curriculum.

6.4.3 – Mixing in creativity

The research has surveyed creativity in education and suggested that a number of problematic areas exist. These include what teachers conceive of as creative actions, how these might relate to learning and how the new technology might be seen to foster and express creativity. It has also been noted that the educational background of music teachers affects their ability to teach for creativity. Moreover, the public arena of the classroom may result in some pupils feeling vulnerable in creative contexts.

Creativity is currently being revisited and reconceptualised across the curriculum. However, in music education there is a danger that – due to the fact that 'composing' is already a part of the music curriculum – this might not occur. This would be a mistake. There is an urgent need to reconsider what music teachers intend when they ask pupils to creatively engage in the classroom. Why

are they are using creativity? How might it promote musical learning? What is the nature of that learning? The research has shown that a number of respondents felt that being creative promoted a range of transferrable life skills. Hopefully we would want all education to do this. However, as previously stated, such outcomes may not be enough to justify the existence of a discrete creative music curriculum at Key Stage 3. A debate is needed which reconnects creativity with real music and meaningful learning.

The readiness of teachers to 'teach for' creativity also needs to be addressed. At undergraduate level the dichotomy between performing and composing and the promotion of a narrow range of compositional techniques needs to be questioned. Beyond that, teacher education courses and continuing professional development should offer clearly delineated programmes that foster and promote creative teaching and a revised pedagogy of educational creativity. Teachers also need time to maintain, refresh and expand their own musical creativity. It is difficult to conceive of how this might be done in the current educational climate. However, the perception that this is a professional entitlement – one which keeps alive the very essence of the music educator – is at least a start in trying to combat the current assault on teachers' professionalism.

The research suggested that one of the problems with musical creativity at Key Stage 3 was the pupils' lack of skills in relation to available resources. Other issues relating to conceptual understanding, relevance and authenticity impacted on how participants related to creative engagement in the classroom. The research has suggested that the new technology can provide many opportunities for musical creativity. Moreover, it allows all pupils, irrespective of skills, to handle musical materials. However, the pupils' actions in such contexts need to be perceived by teachers as 'musical' and as 'creative'. Hence the new technology needs to be included in the debate which re-conceptualises creativity and perceptions of musicality in the music curriculum.

6.4.4 – Valuing the mix

The dominance of assessment in education is having a negative effect on teaching and learning. At the time of writing teachers' unions are planning to boycott the remaining 'SATs[37]' – maintaining that they have become 'unacceptable for the future of our children's education' (Curtis, 2010). Some may see this as encouraging. However, there still exists an insidious culture of audit-based assessment which fragments learning and mechanically tests the results. It is to be hoped that music teachers may find the voice to challenge such arid forms of assessment.

In doing so they need to find expanded ways to monitor and measure creative engagement and its outcomes. This research has suggested that taking account of the pupils' value needs more emphasis. This would need to gauge the pupils' perceptions in terms of enjoyment, motivation, engagement, authenticity and validity. It would also mean finding new ways to frame and share the pupils' work through a range of connected technologies. Not only should the pupils' response in the Key Stage 3 classroom be tracked. Their engagement outside the classroom – in extra curricular or informal contexts – should also be monitored. Similarly, their openness to continuing music at Key Stage 4 and beyond should be noted.

This is not to dismiss the continuing need for teachers to devise clear creative frameworks which the pupils can explore and learn from. Teachers should endeavour to carefully design and support these through the new technology. Their own criteria for evaluating the pupils' work in this area should be linked to the frameworks and should value process and outcome. Hence it is important that the frameworks are appropriate in relation to the technologically

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[37] Statutory Assessment Tests

mediated and cultural context. New criteria relating to the musical actions of the pupils – for example, expressive control of the technology – need to be developed and expanded. Ways of valuing interactions that make use of ready-made materials also need to be considered.

Currently the outcomes of creative work in the Key Stage 3 classroom are lost. While levels may be given, the actual 'sound' of the musical outcome is not recorded[38]. The analysis of pupils' work undertaken in this research suggests that this could change in the light of the new technology. The digital record could enable teachers to appraise and feedback on pupils' work in more detailed and interactive ways. As previously stated their appraisal would require criteria appropriate to the medium. With this in place the digital record could be shared, disseminated and used to develop ongoing portfolios of a pupil's musical endeavour. The existence of the 'mix' could become a powerful tool in aiding formative assessment while developing a tangible record of the pupil's achievement.

6.5 – Limitations of the research

While the research ranged across five sites and three academic years it is unavoidably limited in scale. The locale of the schools and the links with the Goldsmiths' partnership – while offering rich connections and access – may also have coloured the research. The 'openness' to the potential of the new technology demonstrated by most of the teachers involved in the research might be seen as creating a degree of bias. I hope this is not the case.

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[38] The practice of making audio recordings of pupils' work, while once apparent, is now rare. If recordings are made they take place at the end of schemes of work and generally represent the work of the group as opposed to the individual.

Some elements emerging from the research required further testing and analysis. For example, a more detailed comparison of traditional lessons with the lessons involving the new technology would have allowed me to triangulate the views of the pupils and teachers in this area. My detailed look at the musical outcomes would have benefitted from returning to the schools and discussing the music with the creators and their peers. It would have been helpful to see a set of lessons that built upon the initial introduction of the technology to see if learning was developed and motivation maintained. It would have also been beneficial to follow the beginning teachers into classroom contexts where creativity was mediated by technology. Unfortunately there was not the time for these extensions to the research.

An important area of the research, which was only picked up in the final stages, was the pupils' preferences in terms of musical genre. This is possibly an area for future research. However, I feel now that I should have probed musical preferences across all of the schools involved in the research. This would have allowed me to develop links between the pupils' musical worlds and the opportunities offered by the technology. It would have been interesting to see if pupils had strong preferences in year 7, what these were, and how they changed, developed or strengthened as the pupils progressed to year 9. In the light of this the appropriateness of the technology in relation to pupil preferences could have been gauged.

6.6 – Possibilities for future research

My own view is that the new technology discussed in this thesis offers a number of ways in which all pupils can engage with musical creativity. However, the research used a narrow lens as part of its research design in the hope that the resulting analysis and discussion would have sufficient depth. Further research

is required to complement this approach. I envisage that some of the important area to probe in future research should include the following:

- Research into other expressions of the new technology is required. A number of programmes handle the new technology in different ways. For example, Ableton Live (Ableton, 2010) presents the new technology as a performance tool that utilises ready made materials in real time. Other programmes, such as Traktor (Native-Instruments, 2010), present as DJ and remix software. Certain expressions of the new technology, presented as games (GuitarHero, 2010; singstar, 2010), make interactive and creative use of the new technologies by foregrounding instrumental and vocal performance.

- Research is needed in relation to how the various expressions of the new technology might impact on age, locale, gender, ethnicity and class. How might the technology, along with its musical and cultural associations, affect different pupils, in different places, in different cultures and at different times?

- Research is needed to investigate how the new technology works in informal settings where the teacher is absent. The resources are easily transferrable to the home setting, or may take place in extra curricular contexts. It may also be the case that the classroom could provide an informal setting for the exploration of the technology.

- Research needs to revisit the meaning of creativity in the light of ready-made musical materials which promote digital appropriation and creative reuse. In doing so the nature of creativity and its relation to learning need to be reviewed.

- Research needs to continue to probe the values that exist in music education. In particular it needs to consider how the profession might value the musicality of pupils who are non-performing musicians. In doing so it will call into question issues relating to entitlement, access and equity.

6.7 – Conclusion

During my career as a musician and educationalist I have experienced many things that have been 'wrong with school music' (Ross, 1995). However, I have also experienced many things that were 'right' about music in school. We should not forget that it continues to survive as a subject in its own right – which is something of an achievement in an increasingly vocationally driven curriculum. Many committed and talented young musicians opt to become music teachers and go on to teach in our schools. I have seen such teachers deliver inspired lessons which promote learning in contexts which are fun, relevant and 'real'. I have seen many pupils who have been 'turned on' by music in school and who go on to develop their musical passions in a variety of contexts. School music continues to be showcased and celebrated in school concerts, local and national events.

However, as this thesis has argued, music education tends to serve certain types of pupils and generally only deals in certain types of music. The new technology suggests that this need no longer be the case. While not wanting to denigrate or eradicate the good musical work that goes on in our schools it is perhaps time to broaden our conceptions of the music curriculum, creativity and musicality. In doing so we can offer children, who were previously excluded, access to their own expressive world of music. To return to the question posed by Finney and Burnard (2007) in Chapter 2:

'What is this change for?'

It is to allow all pupils access to our music curriculums.

'What will be improved?'

The non-performing musicians' sense of worth in their musical self,

and the status of music as a vibrant and relevant subject in our schools.

'How will the worthwhile human values inherent in the act of making music be preserved and sustained in a digital age?'

By ensuring that we value and respect all the musical actions that result in musical creation and communication.

Musical Creativity Questionnaire

Bill Crow

Name: **Male** ☐ **Female** ☐

Age:

1. Do you have any of the following qualifications? Please tick all that apply and give details where requested.

Music O Level	☐	**Grade 8 Music Theory**	☐
Music GCSE	☐	**Music-related NVQ/GNVQ**	☐
Music A Level	☐	**BTEC National Diploma**	☐
Grade 8 Vocal/Instrumental	☐	**Music-related BTEC HND**	☐

Music Diploma ☐ **Details** _____

U/grad Degree (or equivalent) ☐ **Details** _____

Postgraduate qualification ☐ **Details** _____

Other ☐ **Details** _____

2. What has been your practical involvement in musical creativity to date? Please tick all that apply and give details where requested.

GCSE exam work ☐

Details _____

A level exam work ☐

Details _____

Undergraduate course requirement ☐

Details _____

Other ☐

Details _____

3. Give an example of a musical activity that you believe to be 'creative'.

Musical activity:	

4. Name a musical outcome (e.g. composition) that supports the above view.

Musical outcome:	

5. What was the main focus of your undergraduate training? Tick no more than two areas.

Performance ☐ **Musicology** ☐

Analysis ☐ **General musicianship** ☐

Composition ☐ **Improvisation** ☐

Other ☐ Details _____

6. How often do you currently engage in musical creativity?

Every day	☐	**Weekly**	☐
Monthly	☐	**Once or twice a year**	☐
Never	☐		

7. What mode do you use when you are musically creative?

Working alone	☐	**Working with others**	☐

8. Describe the process you use when you are musically creative.

Creative process:	

9. How do you record/remember your musical creativity?

Write it down on paper	☐	**Memorise it**	☐
Audio recording	☐	**Music software**	☐

Name of software package(s) Details

10. If you were a composer what genre would you mainly use? Tick only one area.

European tonal tradition	☐	**European experimental**	☐
Pop/Rock	☐	**Jazz**	☐
World fusion	☐	**Dance/Techno**	☐

Other ☐ Please state: _____

11. What sort of attributes do you think a good composer/creative musician should possess? Choose 3 of the following and list them in order of importance

Tunefulness
Performance skills
Originality
Notational skills
Seriousness
High level of musicianship
Popular appeal
Genius
Computer skills
Social skills
Sincerity
Inspiration
Difficulty
Accessibility
Authenticity
Organisation skills

1	
2	
3	

12. Name a composer/creative musician who you think is the best of all time?

Best composer:	

13. Suggest how musical creativity might play a part in your initial teacher training year?

Creative process:	

14. State two things that pupils might learn when engaging in musical creativity?

Musical learning:	**1.** **2.**

The questionnaire is now complete. Thank you very much for your time.

Appendix 1b: Research tools - Beginning teacher interview questions

Introduction, assurances and permissions: *'Thanks for taking part in these follow up interviews on musical creativity. Can I assure you that you will remain completely anonymous in any analysis and publication of these responses. Do you mind if I record the interview and take notes'*

Focus: *Pupil learning and the classroom environment:*

1. What do you think is the main thing that pupils learn when they engage in musical creativity*? (5)

   Probes: 'How do they learn that?' 'Give an example.'

2. What do you think is the main difficulty that pupils experience when engaging with musical creativity in the classroom? (5)

   Probes: 'Why is that difficult?' 'Give an example.'

Focus: *The trainee's involvement with musical creativity:*

3. Has musical creativity played a part in supporting your own teaching this year? (4)

   Probes: 'How has that supported you?' 'Give an example.'

4. Have you experienced any problems in relation to your own musical creativity this year? (4)

   Probes: 'What has been the main problem?' 'Why has that been a problem?' 'Give an example.'

5. Do you feel your undergraduate training prepared you sufficiently for promoting musical creativity in the classroom? (2)

   Probes: 'Is that Yes/No?' 'Why?'

**Musical creativity definition: 'making musical choices', 'improvising', 'composing', but generally not 'performing' or 'listening'.*

Bill Crow

Appendix 1c: Research tools - Pupil interview questions

Preliminary questions	School 1	School 2	School 3
• Name?	◆	◆	◆
• Age?	◆	◆	◆
• Do you/have you played a musical instrument?	◆	◆	◆
• Would you call yourself a 'musician'?		◆	◆
• Do you have a computer at home?	◆	◆	◆
• Do you use it to play/make up music?	◆	◆	◆
• What sort of music do you like?			◆

GarageBand questions	School 1	School 2	School 3
1. What do you like about working with GarageBand?	◆	◆	◆
2. What don't you like about working with GarageBand?	◆	◆	◆
3. What musical things do you think you do with GarageBand? *(Prompt: for example: things that musicians (a band) would do, like play, perform...)*		◆	◆
4. What do you think you are learning when you use GarageBand?	◆	◆	◆
5. Does GarageBand let you create (make up) your own music? *(Prompt: for example: make up your own music, like write pieces or songs...)*	◆	◆	◆
6. What do you think of the music that you make with GarageBand? *(Prompt: for example, do you like it? Is it 'real' music? Would your friends like it?)*		◆	◆
7. How does this type of lesson compare with other types of music lesson?	◆	◆	◆

Appendix 1d: Research tools - Teacher interview questions

1. How do feel the GarageBand project went? *

2. How did you perceive your role as a music teacher in this work? (Was it different from other types of music teaching? Did you allow the pupils more autonomy? Did you shape the learning?) *

3.What do you think the pupils liked about working with GarageBand?

4. What do you think the pupils didn't like about working with GarageBand?

5. What musical things do you think the pupils did with GarageBand?

6. What do you think the pupils were learning when they used GarageBand?

6b. What do you think the pupils were not learning when they use GarageBand?

7. Does GarageBand let the pupils create their own music?

8. How do you feel it compares with other types of music lesson?

9. How did you assess/value the GarageBand outcomes?

10. Do you think that the pupils valued the music they made with GarageBand?

* Not asked in School 1

Appendix 1e: Research tools – Teachers' panel assessment/value exercise*

Track A: FAJ

Track B: D and J

Listen to and look at the following GarageBand tracks. After two hearings answer the following:

1) Which one would you assess/value as the better musical outcome?

A B (circle one)

2) How would you grade them using the following scale?

5 (very good) 4 (good) 3 (fair) 2 (satisfactory) 1 (poor)

A: 5 4 3 2 1 (circle one)

B: 5 4 3 2 1 (circle one)

3) What were the main criteria you were using when making your judgement?

State the overall criteria and describe how you applied it to the pieces.

Criteria	Description/How it was applied

* Example from School 1

Appendix 1f: Research tools – Teachers' panel group interview questions

1. Does GarageBand (using loops) allow the pupils to be creative? In what ways?

2. What do you think the pupils are learning when they use programmes such as GarageBand?

3. What do you think the pupils are not learning when they use programmes such as GarageBand?

4. What would you see as your role as a teacher when working in this type of context?

Appendix 2: Summary of nVivo analysis of interview questions*

Tables showing: areas of focus emerging from analysis, number of respondents commenting on the area and the number of overall coded responses.

Question 1/3: What do you (the pupils) like about using GarageBand?

Area of focus	Respondents	Number of Responses
Ease of use	20	34
Lets you make your own music	27	31
Lots of choice	23	29
Quality of samples	12	13
Fun	12	12
Provisional nature	5	8
Can 'see' the structure	5	6
Using the computer	2	3

Table 1

Question 2/4: What don't you (the pupils) like about using GarageBand?

Area of focus	Respondents	Number of Responses
Technology getting in the way	11	13
Too much choice	6	7
Lack of choice/stylistic limitations	4	4
Technology barriers (e.g. keyboards)	2	4
Confusing	4	4
Editing limitations	4	4
Assembly is difficult	3	3
Can't perform with GB	3	3

Table 2

*The first question in the teacher interview was not coded.

Question 2 (teachers): *How did you perceive your role as a music teacher?*

Area of focus	Respondents	Number of Responses
Being a facilitator	3	10
Guiding choice	2	8
Modelling	3	7
Teaching 'skills'	2	5
Providing technical support	3	5
Monitoring progress	1	4
Providing frameworks	2	3
Listening to outcomes	2	3
Providing context	2	3
Managing time	2	2
Sharing	1	1

Table 3

Question 3/5: What musical things do you think you (the pupils) do with GarageBand?

Area of focus	Respondents	Number of Responses
Making beats	7	7
Mixing/remixing	6	6
Rap/Lyrics	6	6
Making songs	6	6
Recording	5	5
Editing	2	2
'Hearing' beats and tempos	2	2
Composing to video	2	2
Experimenting	1	1
Rehearsing	1	1

Table 4

Question 4/6: What do you think you (the pupils) are learning when you use GarageBand?

Area of focus	Respondents	Number of Responses
Structure (Rondo)	33	41
Instruments	18	19
Mixing	9	10
Technology	8	9
Creativity	8	8
Sync to video	7	7
Music vocabulary	5	5
Other learning (including listening, pulse, mixing and social interaction)	19	29

Table 5

Question 6b: What do you think the pupils are not learning when they use GarageBand?

Area of focus	Respondents	Number of Responses
Not developing instrumental skills	5	8
Not doing it for themselves	4	6
Not developing group skills	2	3
Not developing notational literacy	2	3
Not prepared for exams	1	2

Table 6

Question 5/7: Does GarageBand let you (the pupils) make up your (their) own music?

Area of focus	Respondents	Number of Responses
Creativity 'yes it can'	50	60
Creativity 'no it can't'	7	9
Creativity confusions (e.g. can't play/sing in own music)	7	8
Creativity 'not sure'	7	8

Table 7

Question 6/10: What do you (the pupils) think of the music that you make with GarageBand?

Area of focus	Respondents	Number of Responses
Positive	27	27
Not sure	5	5
Negative	1	1

Table 8

Question 7: How does it compare with other types of music lesson?

Area of focus	Respondents	Number of Responses
Better than other music lessons	43	62
The same as other music lessons	10	10
Not as good as other music lessons	4	5

Table 9

Question 9 (Teachers only): How would you assess/value GarageBand outcomes?

Area of focus	Respondents	Number of Responses
Responses relating to 'criteria'	5	16
Difficulty of assessment	3	8
View of pupil response	3	6
Value related to 'choices'	1	4
Marking 'scheme' comments	1	3
Marking 'holistically'	1	2

Table 10

Appendix 3: CD and DVD track listing

Audio CD:

The following tracks will play in a CD player or on your computer

CD Track 1 – from MS4 (intro)

CD Track 2 – from TPR (intro)

CD Track 3 – from AN

CD Track 4 – from JRK

CD Track 5 – from MS4

CD Track 6 –from DLG

CD Track 7 – FAJ complete

CD Track 8 –DJ complete

CD track 9 – Woody Latin Bass transition from PS

CD track 10 – Percussive to melodic swap from KG

CD track 11 – Rap to singing from KG

CD track 12 – Waveform of talk moving to vocal from KG

CD track 13 – J and L complete

CD Track 14 – E and E complete

Movies DVD:

The following movies will play on a DVD player or on your computer. Click on the movie track name on the main screen to view the movie

Movie track 1 - Sound effects as movie begins from T&C

Movie track 2 – Ringo's drums from S&D

Movie track 3 – Synth sound from C&D

Movie track 4 – E and J complete

Appendix 4: CD and DVD

(Attached to the back inside cover)

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